501 - AS-BUILT DRAWINGS

I. GENERAL REQUIREMENTS

I.1. REQUIREMENTS

As-Builts or record drawings are required for all JEA owned potable water, wastewater, chilled water and reclaimed water pipelines, pump stations, treatment plants and facilities located in either public right-of-way, in a dedicated JEA easement or on JEA property and shall be prepared in conformance with Section 501. All private (excluding single family residential) water, wastewater and reclaimed water pipelines and facilities are required to be as-built; however, the as-builts of the private facilities do not have to meet the same requirements outlined in Section 501. The following definitions shall apply to this section:

I.2. DEFINITIONS

I.2.1. AS-BUILT(S)

I.2.1.1. Applies to Work involving new construction or replacement construction and/or requires a Permit for Construction.

I.2.1.2. They are a revised set of drawings that represent and document the final materials and location of installed Work. They reflect all changes made by Addendum, change order, or Supplemental Work Allowance (SWA) during the construction process, and show the exact dimensions, geometry, and location of all elements of the Work completed by a Contractor under a contract.

I.2.1.3. They are submitted by the Contractor and certified by a Professional Land Surveyor in the employ of the Contractor or by a Professional Engineer in the employ of the Contractor upon completion of a project or of a phase of a project.

I.2.2. RECORD DRAWING(S)

I.2.2.1. Applies to Work involving maintenance and/or minor replacement of existing infrastructure which does not require any Permit for Construction.

I.2.2.2. They are a revised set of drawings that represent and document the final materials and location of installed Work. They show the exact dimensions, geometry, and location of all elements of the Work.

I.2.2.3. These drawings do not require certification by a Professional Land Surveyor or Professional Engineer.

I.2.3. REDLINE DRAWING(S)

I.2.3.1. Applies to Work that is ongoing and documents the current installation progress of planned Work or applies to field observations and/or findings that represent a deviation, discovery, or change from expected conditions.

I.2.3.2. These drawings do not require the certification by a Professional Land Surveyor or Professional Engineer.

I.2.3.3. They represent and document the current materials and location of installed work.

I.3. SUBMITTAL TIMING

Upon completion of the Work and prior to dedication of utilities to JEA or final payment under the Contract with JEA, Contractor shall furnish to JEA electronic copies of asset data tables and as-built drawings or record drawings and certified paper copies of the as-built or record drawings which have been revised to indicate final as-built data (true to scale) and in accordance with all addenda, change orders, verbal field changes, JEA directives, Supplemental Work Account (SWA)s, and all requirements with respect to the drawings specified herein. A JEA representative shall verify as-built information is consistent with observable field conditions. Redrawn as-builts will be deemed unacceptable.

I.4. JEA PROJECT WORK

I.4.1. An electronic file of the original Project drawings will be furnished to Contractor for the purpose of recording and preparing as-built or record drawings.

I.4.2. The Contractor shall provide access to buried facilities to allow for accurate horizontal and vertical measurements to be acquired by the surveyor or engineer as needed. Should discrepancies exist, at the discretion of JEA, and at no cost to JEA, the contractor shall verify buried facilities.

I.4.3. All as-built information shall be recorded and kept current during the progress of the Work. Monthly, the Contractor or Developer's authorized agent shall furnish to the JEA Representative a copy "redline" set of drawings identifying those field changes made to the Work to date, along with a copy of the associated field notes. Revisions and recording of information on the "redline" copy set of drawings shall be done to scale, in red ink, clearly and accurately identifying those changes to the Work. The JEA Representative may review and comment on the drawings which shall be incorporated into the next month's as-built submittal. Failure to incorporate changes in the following month submittal may result in rejection of any invoice submittal to JEA, denial of certification of completion or denial of acceptance by JEA.

I.4.4. The JEA representative will review and comment on the proposed final as-built drawings. The subsequent submittal shall incorporate a copy set of CADD drawing preliminary as-builts with comments by JEA. The JEA Representative shall review and comment on the copy set of CADD drawings which shall be incorporated into the final as-built submittal.

I.5. SIGNED DOCUMENTS

I.5.1. AS BUILT DRAWINGS

Each page of the as-built drawings shall bear the printed name, and the signed as-built certification of the general contractor, and the signed and sealed as-built certification of the professional surveyor and mapper (PSM) or registered professional engineer (PE) who provided the horizontal and vertical dimensions and elevations on the as-built drawing. The signatures shall certify that the as-built drawings do, in fact, reflect the true as-built conditions as located under the direct supervision of the registered surveyor and/or professional engineer. The drawings shall be certified using the forms provided by JEA (See the end of this section).

I.5.2. **REDLINE DRAWINGS**

Each page of the reline drawings shall bear the printed name, and the signed redline certification of the project manager who provided the horizontal and vertical dimensions and elevations on the as-built drawing. The signature shall certify that the re-line drawings do, in fact, reflect the true built conditions of the infrastructure. The drawings shall be certified using the forms provided by JEA (See the end of this section).

I.6. FINAL SUBMITTALS

Upon completion of the work, Contractor shall deliver the following completed documents:

I.6.1. As-Builts required for all projects requiring permitting:

I.6.1.1. As-built drawings in .dwg format (Auto CAD) including all xref files

I.6.1.2. As-built drawings in PDF format

I.6.1.3. As-built drawings in paper format with two copies certified and embossed on 24" x 36" paper

I.6.1.4. As-built submittal check lists, signed and completely filled out

I.6.1.5. As-built submittal transmittal form

I.6.1.6. Asset data tables for each asset type in JEA electronic format

I.6.2. Record Drawings required for all minor maintenance work, water plants, wastewater plants, potable water wells, and reclaimed facilities that do not require permitting:

I.6.2.1. Record drawings in .dwg format (Auto CAD) including all xref files

I.6.2.2. Record drawings in PDF format

I.6.2.3. Record drawings in paper format on 24" x 36" paper

I.6.2.4. Record drawing submittal check lists

I.6.2.5. Record drawing submittal transmittal form

I.6.2.6. Equipment attribute forms or Asset data tables for each asset type in JEA electronic format

I.6.3. JEA will review the submittal for correctness and completeness and will return either an approval stamp or list of required changes for resubmission. Resubmittal of final drawings, with completed revisions, shall be accompanied by the marked-up set of revision requirements as provided by JEA.

II. DRAWING REQUIREMENTS

When making changes to the AutoCAD drawing for as-built purposes, originally designed utility lines that were installed differently in the field shall be deleted with the applicable notes and the correct location, notes and coordinates should be drawn in and/or added in to accurately portray the as-built conditions. Simply

changing the coordinates, notes or just adding notes is not acceptable. Do not strike through notes or elevation call-outs, change them in the drawing to reflect as-built conditions. Lines, notations or required information not affected by addenda or SWAs shall not be disturbed. The legend used on the original Project drawings shall also be used to make all necessary corrections.

II.1.1. Each document shall be labeled "AS-BUILT" or "RECORD DRAWING", as applicable, in approximately 1" high printed letters and shall be submitted on 24" X 36" sheets.

II.1.2. Each document shall contain a graphic scale accurately representing the scale of the drawings.

II.1.3. Each document shall contain a north arrow.

II.1.4. As-builts shall utilize the State Plane Coordinate System using the Florida East Zone and the North American Datum of 1983 preferred for horizontal data; North American Vertical Datum (NAVD) 1988 Datum is preferred for elevation data. Benchmarks used must be shown and verified on the drawings.

II.1.5. Deflections that result in a change of more than two feet from the designed alignment shall be located and recorded regardless of the presence of a fitting.

II.1.6. To enable the efficient future location of the referenced facilities, the PSM or PE performing the as-built will independently verify the positional accuracy relative to the referenced horizontal and vertical datum. This will be accomplished through checks to published horizontal and vertical control points from local, state or federal agencies. These checks are to be independent of checks to local project control.

II.1.7. The positional accuracy relative to the referenced published control points used shall not exceed 0.5' horizontally and 0.1' vertically. Elevations relative to the site facilities must be within 0.1' of each other.

II.1.8. As-builts shall show physical dimensioning of the separation between water mains, sewer mains, reclaimed mains and chilled water mains at crossings with all water mains, wastewater mains and facilities, reclaimed mains, chilled water mains and storms drains and facilities. This can be shown by providing elevations of each pipe or structure, or noting measurement taken at the conflict crossing between the pipes or structures on the plan view. As-builts shall also show measurement of vertical and horizontal separation in areas where water mains are parallel to wastewater mains, reclaimed mains or storm drains. The vertical and horizontal separation shall be shown for the full length of the parallel run.

II.1.9. Special detail drawings will be required where needed for clarity. Clarity is defined as pipe, fittings, valves, meter boxes, etc. clearly visible when printed to scale and when zoomed and viewed electronically.

II.1.10. Vicinity map shall be included and be similar to a Google Map or Bing Map with an arrow pointing to the location of the project. Vicinity map shall not have aerial imaging. Vicinity map shall include major street names in bold allowing the project to be located quickly. Vicinity map on the cover sheet should be approximately 6 inches by 8 inches. Outside of the map write "Project Location" and a leader line pointing to the site.

II.1.11. Master Plan phase maps required for projects that are built in phases, the phase included in the as-built shall be shown as related to previous and future phases (as applicable). Phase maps shall be shown the cover page an on each document.

II.1.12. Street names

II.1.13. Match lines referencing the appropriate drawing page sheet number.

II.1.14. All easements shall be shown with Official Record (OR) Deed book and page. Contractor shall coordinate with JEA real estate for JEA acquired easements.

II.1.15. Unless approved otherwise by JEA, the minimum scale requirements on the drawings are as follows:

- Pump Station Site: 1" = 5' (horizontal scale)
- Plan & Profile: 1" = 40' (20' preferred, horizontal scale)
  1" = 4' (2' preferred, vertical scale)
- Plan (only): 1" = 40' (20' preferred, horizontal scale)

II.1.16. Separate drawings are required for water, wastewater, reclaimed and chilled water. No drawings will be accepted which contain a combination of the above construction types, unless otherwise approved by JEA Manager. Exceptions will be allowed for simple single service, small property improvements where all utilities can be clearly depicted on one sheet.

II.1.17. All features depicted in the as-built drawings must be surveyed, JEA will spot check all coordinates to ensure accuracy.

II.1.18. Failure to comply with the JEA Standards herein or failure to verify "As Builts" as required shall result in the Contractor, Engineer, and/or Surveyor being restricted from bidding on future JEA projects and being removed from the JEA approved engineer, surveyor or contractor's list for a minimum of twelve months.

II.1.19. Cover sheet and each document sheet shall include the JEA Availability Number and/or the Oracle Work Order/Project Numbers for each commodity – Water, Wastewater, Reclaimed Water and Chilled Water. These numbers shall be approximately .3 inches tall and located under the "As-Built" notice. A JEA representative will provide the Work Order/Project Numbers at the preconstruction meeting and will be responsible for checking this information at the end of the project, when preliminary as-builts are submitted, to ensure that the Oracle Work Order/Project Numbers have not been modified/added throughout the project.

III. SPECIFIC SYSTEM REQUIREMENTS

III.1. PRESSURE PIPE SYSTEMS

This section covers pressure pipes including water, wastewater, reclaimed, vacuum and chilled.

III.1.1. The location of all piping, valves, fittings, fire hydrants, meter boxes, backflow preventers, manholes, vacuum pods, casings, private pump outs, and points of connection to the existing system shall be referenced by coordinates.

III.1.2. The positional accuracy relative to the referenced published control points used shall not exceed 0.5' horizontally and 0.1' vertically. Elevations relative to the site facilities must be within 0.1' of each other.

III.1.3. Coordinates and elevations on the main and finished grade will be required at all pipe dead ends, size changes, points of connection to existing system, fittings, valves, meter boxes, at intersections/crossings of pipes, and at 100' maximum intervals from the nearest pipe or fitting elevation.

III.1.4. Asset data tables are required for all valves, hydrants, meter boxes, manholes, vaults, vacuum pods, locate wire boxes and fittings. Private pump out assembly components are required to be included in the appropriate tables, (See end of section for data table examples. Data tables can be downloaded from jea.com.)

III.1.5. Every valve, hydrant, meter box, manhole, vault, vacuum pod, locate wire box, private pump out assembly component and fitting on the as-built is to be numbered and referenced in the asset data table. Minimum font on data tables shall be 8 pts.

III.2. GRAVITY WASTEWATER SEWER SYSTEMS

III.2.1. The location of all piping, casings, wyes, tees, manholes, cleanouts and service points to the existing system shall be referenced by coordinates.

III.2.2. The positional accuracy relative to the referenced published control points used shall not exceed 0.5' horizontally and 0.1' vertically. Elevations relative to the site facilities must be within 0.1' of each other.

III.2.3. Runs of gravity sewer shall be identified (i.e., 300' of 8" PVC SDR26 at S=.004.) A run is defined as a pipe line between manholes.

III.2.4. Service points shall be identified. A service point is defined as the lateral service point located at the transition from the public right of way or utility easement to private property at the property line. It is the point where JEA ownership ends and private ownership begins.

III.2.5. Top of pipe elevations and finished grade elevations at the property line shall be given for all service points.

III.2.6. Elevations shall be given for the north rim of the top of all manhole covers and all manhole inverts with the direction of the invert listed (N, E, S, W, NW, etc).

III.2.7. Asset data tables are required for all gravity sewer runs, fittings on runs, service points and manholes. (See end of section for data table examples. Data tables can be downloaded from jea.com.)

III.2.8. Every gravity sewer run fitting, service point, and manhole on the as-built shall be numbered and referenced in the asset data table. Minimum font on data tables shall be 8 pts.

III.3. WATER, RECLAIMED AND WASTEWATER PUMP STATIONS

III.3.1. Wet well size and location shall be indicated and located relative to property lines and/or right-of-way lines.

III.3.2. All utilities within the pump station site shall be located relative to property lines and/or right-of-way lines.

III.3.3. The Contractor shall provide a boundary survey of the pump station site showing above and below ground improvements. This survey and sketch shall be prepared by a registered land surveyor in accordance with Chapter 472 of the Florida Statutes. The sketch shall be submitted with as-built drawings prior to pump station pre-start. The survey and sketch shall include:

III.3.3.1. Elevations shall be indicated at inverts, wet well top (rim elevation), wet well bottom, concrete slab corners and underground piping, valves and fittings.

III.3.3.2. All utilities materials and sizes of lines and fittings above and below ground shall be indicated.

III.3.3.3. As-built information shall be provided for the pump station site plan on a separate page. Within the pump station site plan/boundaries the following shall be located/drawn horizontally: all electrical panels (demarcation, control, distribution, meter can, disconnect/transfer switch(s), I/O and flow meter), emergency pump-outs, hose station, above and underground electrical conduit, piping, valves, ARVs, fittings, manholes, generator/pony pump and fuel tank (if applicable), transformer, irrigation system, fence, auxiliary electrical enclosures and flow meter as applicable.

III.3.4. All schedules that show site information, wet well dimensions/data, pump/motor and electrical data and emergency pony pump/generator data shall be corrected to show the as-built condition and submitted with the pump station drawings.

III.3.5. All buried electrical conduit shall be labeled and located including electrical service from utility transformer to station meter and to control panel.

III.3.6. See Chapter IV. 2. - Section 433 for additional requirements.

III.3.7. The Contractor shall submit “As-built” drawings prior to pump station pre-start-up.

III.3.8. If the pump station is privately owned, provide a note on the drawing identifying the owner’s name, address and phone number for future coordination tasks and emergency events.

III.3.9. See Pump Station As-Built check list at end of chapter.

III.4. STORM DRAIN SYSTEMS

III.4.1. The location of all piping, manholes, and inlets, shall be referenced by coordinates.

III.4.2. The positional accuracy relative to the referenced published control points used shall not exceed 0.5’ horizontally and 0.1’ vertically. Elevations relative to the site facilities must be within 0.1’ of each other.

III.4.3. Runs of storm wastewaters shall be identified (i.e., 300' of 15" RCP at S=.004.)

III.4.4. Elevations shall be given for the north rim of the top of all manhole covers and inlets and catch basins and all manhole, inlet and catch basin inverts.

III.4.5. Storm Drain, manhole, inlet and catch basin types shall be identified.

III.5. BUILDINGS AND INTERIOR EQUIPMENT

III.5.1. As-built drawings for buildings shall be marked to indicate any and all changes made. As-built drawings shall also include the installed size, elevation and location of all interior equipment, structures and concealed materials, including plumbing, electrical conduits, ducts, air and piping. The piping shall be identified as to its use. Internal backflow devices shall be clearly noted in drawings.

III.5.2. All equipment shall have equipment attribute forms for each asset type completed.

III.6. HORIZONTAL DIRECTIONAL DRILL (HDD)

The beginning and ending points of the HDD main shall be provided by a registered Professional Surveyor and Mapper. The HDD contractor shall provide a JEA approved certified as-built drawing, directional bore log plan and profile on a 24 x 36 sheet and Auto CAD file (certified by the HDD contractor) of the HDD work indicating horizontal and vertical location data (continuous or data points not to exceed 25 LF of main). A copy of the bore log shall be placed on the correct "As-built" sheet where drills are performed. An electronic PDF file containing this same information shall also be provided. See Chapter VI. 2. - Section 750 for additional requirements.

IV. ASSET SPECIFIC REQUIREMENTS

IV.1. PIPELINES

IV.1.1. Each pipe segment shall show a call out designating each length, size, material and pressure class of pipe installed with leader pointing to the installed pipe. Short pipe segments (less than 20 feet long) contained between fittings/valves can have the pipe length description and leader line grouped in one descriptive note with leader line pointing to the group of pipes/fittings/valves.

IV.1.2. Pipe segments shall be defined as pipe lengths between valves, fittings, manholes, meter boxes, vacuum pods, pump stations, vaults, etc.

IV.1.3. Lateral or service pipe segments shall be identified by a note on each page. Note shall describe the typical lateral/service size, pipe material, and pipe pressure class. Laterals/Services that deviate from the typical note shall have a pipe segment call out as described IV.1.1.

IV.1.4. Gravity wastewater pipe segments shall be designated in a table, inserted in a conspicuous location within the As-Built, with the following data. Minimum font on as-built data tables shall be 8 pts.

- Sewer Pipe Run Number
- Sewer Pipe Subtype = Collection, Trunk
- Facility Owner (JEA or PRIVATE)
- Pipe Size (Inches)
- Pipe Class (SDR26, etc)

- Pipe Material (PVC, etc.)
- Pipe Manufacturer
- Pipe Length (feet)
- Downstream Pipe Invert Elevation (feet)
- Downstream Grade Elevation at Invert (feet)
- Upstream Pipe Invert Elevation (feet)
- Upstream Grade Elevation at Invert (feet)
- Slope (ft/ft)

IV.1.5. Gravity wastewater pipe table shall also be submitted in excel format using the JEA standard excel file which can be downloaded from jea.com. See end of section for data table examples.

IV.2. FITTINGS

IV.2.1. Each fitting shall show a call out designating fitting number, fitting type (45, tee, etc.) and size with leader pointing to the installed fitting. Multiple fittings in close proximity can be grouped with one leader line. A blow-up section may be required to accurately depict all fittings in a congested area.

IV.2.2. Fittings shall be designated in a fitting table, inserted in a conspicuous location within the As-Built, with the following data. Minimum font on as-built data tables shall be 8 pts. Provide a separate fitting table for water fittings, wastewater fittings, reclaimed water fittings and chilled water fittings.

- Fitting Number
- Subtype = Fitting Type (see data table file for subtypes)
- Facility Owner (JEA or PRIVATE)
- Fitting Size Primary (Inches)
- Fitting Size Secondary (Inches)
- Fitting Type
- Manufacturer
- Fitting Material (DIMJ, PVC or HDPE)
- Lining Material
- Fitting Top Elevation (feet)
- Final Grade Elevation (feet)
- Fitting Depth (feet)
- State Plane Northing, X Coord
- State Plane Easting, Y Coord
- Latitude
- Longitude

IV.2.3. Fitting table shall also be submitted in excel format using the JEA standard excel file which can be downloaded from jea.com. See end of section for data table examples.

IV.3. VALVES

IV.3.1. Each valve shall show a call out designating valve number, valve type, and valve size with leader pointing to the installed valve.

IV.3.2. Each valve shall be designated in a valve table, inserted in a conspicuous location within the As-Built, with the following data. Minimum font on as-built data tables shall be 8 pts. Provide a separate valve table for water valves, wastewater valves, reclaimed valves and chilled water valves.

- Valve Number (WV, WWV, RV, CV)
- Valve Subtype = Valve, ARV, Backflow, Hydrant
- (See data file for subtypes)
- Valve Type
- Facility Owner (JEA or PRIVATE)
- Valve Size
- Valve Open Direction (left/right)
- Valve number of turns required to open the valve
- Valve Depth to Operating Nut
- Final Grade Elevation (feet)
- Valve Depth to Nut (feet)
- Valve Manufacturer
- State Plane Northing, X Coord
- State Plane Easting, Y Coord
- Latitude
- Longitude
- RFID/Barcode Number (future)

IV.3.3. Valve table shall also be submitted in excel format using the JEA standard excel file which can be downloaded from jea.com. See end of section for data table examples.

IV.4. HYDRANTS

IV.4.1. Each hydrant shall show a call out designating hydrant number with leader pointing to the installed hydrant.

IV.4.2. Each hydrant shall be designated in a hydrant table, inserted in a conspicuous location within the As-Built, with the following data. Minimum font on as-built data tables shall be 8 pts. Provide a separate hydrant table for water hydrants and reclaimed hydrants.

- Hydrant Number (WH, RH)
- Hydrant Subtype = Hydrant
- Facility Owner (JEA or PRIVATE)
- Hydrant Manufacture Date (year)
- Hydrant Manufacturer
- State Plane Northing, X Coord
- State Plane Easting, Y Coord

- Latitude
- Longitude
- RFID/Barcode Number (future)

IV.4.3. Hydrant table shall also be submitted in excel format using the JEA standard excel file which can be downloaded from jea.com. See end of section for data table examples.

IV.5. MANHOLES

IV.5.1. Each manhole shall show a call out designating manhole number, manhole type, manhole top elevation, invert elevations (with direction) with leader pointing to the installed manhole.

IV.5.2. Each manhole shall be designated in a manhole table, inserted in a conspicuous location within the As-Built, with the following data. Minimum font on as-built data tables shall be 8 pts.

- Manhole Number
- Manhole Subtype = Collection, Force main, Low Pressure, Trunk
  (See data file for subtypes)
- Facility Owner (JEA or PRIVATE)
- Manhole Type (A through J)
- Manhole Drop Type (Inside or Outside)
- Manufacturer/Supplier
- Manhole Size (feet)
- Manhole Material
- Manhole Lining Material
- Manhole Lining Manufacturer
- Rim Elevation (feet)
- Invert Elevations (feet) with Directions
- State Plane Northing, X Coord
- State Plane Easting, Y Coord
- Latitude
- Longitude
- Exterior Joint Tape Type & Manufacturer
- RFID/Barcode Number (future)

IV.5.3. Manhole table shall also be submitted in excel format using the JEA standard excel file which can be downloaded from jea.com. See end of section for data table examples.

IV.6. METERS AND METER BOXES

IV.6.1. Each meter box shall be shown on the as-built drawings. The size meter to be installed in the meter box shall also be indicated adjacent to the meter box or meter box notes. Horizontal dimensioning on the as-built is not required if meter box is located as per standards and is in a residential subdivision.

IV.6.2. Each meter box shall be designated in a meter box table, inserted in a conspicuous location within the As-Built, with the following data. Minimum font on as-built data tables shall be 8 pts. Provide a separate meter box table for water and reclaimed water meter boxes.

- Meter Box Number
- Proposed meter size to be installed by JEA
- Service Type (Water or Reclaimed Water)
- Meter Subtype = Minor Meter (<2"), Major Meter
- Facility Owner (JEA or PRIVATE)
- Meter box manufacturer
- Meter Box Material
- State Plane Northing, X Coord
- State Plane Easting, Y Coord
- Latitude
- Longitude

**For platted subdivisions with lot numbers on the as-builts, as-builts will not be required to identify each water meter or reclaimed meter individually at each point. The lot number combined with a meter prefix will be used to identify the customer points in the meter table.

IV.6.3. Meter box table shall also be submitted in excel format using the JEA standard excel file which can be downloaded from jea.com. See end of section for data table examples.

IV.7. WASTEWATER SERVICE POINTS

IV.7.1. Each wastewater service lateral end point shall be shown on the as-built drawings. Horizontal dimensioning on the as-built is not required if service point is located as per standards and is in a residential subdivision.

IV.7.2. Each wastewater service points shall be designated in a wastewater service point table, inserted in a conspicuous location within the As-Built, with the following data. Minimum font on as-built data tables shall be 8 pts.

- Wastewater Service Point Number
- Wastewater Service Point Subtype = Customer point, Major Meter
  (See data table file for subtypes)
- Finished Grade Elevation (feet)
- Top of Pipe Elevation (feet)
- Depth of Cover (feet)
- State Plane Northing, X Coord
- State Plane Easting, Y Coord
- Latitude
- Longitude

**For platted subdivisions with lot numbers on the as-builts, as-builts will not be required to identify each wastewater connection point individually at each point. The lot number combined with a meter prefix will be used to identify the customer points in the meter table.

IV.7.3. Wastewater service point table shall also be submitted in excel format using the JEA standard excel file which can be downloaded from jea.com. See end of section for data table examples.

IV.8. LOCATE WIRE BOXES

IV.8.1. Each locate wire box shall show a call out designating locate wire box number with leader pointing to the installed box.

IV.8.2. Each locate wire box shall be designated in a locate wire box table, inserted in a conspicuous location within the As-Built, with the following data. Minimum font on as-built data tables shall be 8 pts. Provide a separate locate wire box table for water, wastewater, reclaimed water and chilled water boxes.

- Locate Wire Box Number (WLW-, SLW-, RLW-, CWL-)
- Locate Box Subtype
- State Plane Northing, X Coord
- State Plane Easting, Y Coord
- Latitude
- Longitude

IV.8.3. Locate wire box table shall also be submitted in excel format using the JEA standard excel file which can be downloaded from jea.com. See end of section for data table examples.

IV.9. WASTEWATER, WATER, RECLAIMED WATER PUMPING STATIONS

Wastewater, water, and reclaimed water standard attribute worksheets shall be submitted in excel format using the JEA standard excel file which can be downloaded from jea.com.

IV.10. DATA TABLE EXAMPLES

Sample Gravity Wastewater Sewer Pipe Table:

Sewer Pipe Run #	Subtype Pipe Type	Facility Owner	Pipe Size (inches)	Pipe Class	Pipe Material	Pipe Manufacturer	Pipe Run Length (feet)	Downstream Pipe Invert Elevation (feet)	Downstream Grade Elevation at Invert (feet)	Upstream Pipe Invert Elevation (feet)	Upstream Grade Elevation at Invert (feet)	Slope (ft/ft)
GS1	Collection	JEA	8	SDR26	PVC	US Pipe	489.56	26.94	32.3	28.9	32.1	0.004
GS2	Collection	JEA	8	SDR26	PVC	US Pipe	499.34	24.86	32.4	26.81	32.3	0.0039
GS3	Collection	JEA	12	SDR26	PVC	US Pipe	375.76	23.60	33.2	24.73	32.4	0.003

Sample Fitting Table:

Fitting #	Subtype Fitting Type	Facility Owner	Fitting Size Primary (inch)	Fitting Size Second (Inch)	Fitting Type	Manufacturer	Fitting Material	Lining	Fitting Top Elev. (feet)	Final Grade Elev. (feet)	Bury Depth (feet)	State Plane X Coord (feet)	State Plane Y Coord (feet)	Latitude (Decimal Degrees)	Longitude (Decimal Degrees)
WF1	Elbow 90	JEA	8		Mechanical Joint	American	DI	Epoxy	9.4	12.5	3.1	455667.55	2193930.60	30.3669169	-81.77895000
WF3	Tee	JEA	8	4	Mechanical Joint	American	DI	Epoxy	9.4	12.5	3.1	455667.55	2193930.60	30.3669169	-81.77895000
WF4	Reducer	Private	12	6	Mechanical Joint	American	DI	Epoxy	8.4	11.5	3.1	455667.55	2193930.60	30.3669169	-81.7789500

Sample Water Valve Table:

Valve Number	Valve Subtype	Valve Type	Facility Owner	Valve Size	Valve Open Direction	Turns to Open	Op Nut Elevation (feet)	Final Grade Elevation (feet)	Valve Depth to Op Nut (feet)	Valve Manufacturer	State Plane X Coord (feet)	State Plane Y Coord (feet)	Latitude (Decimal Degrees)	Longitude (Decimal Degrees)	RFID / Barcode Number
WV1	Valve	Gate	JEA	6	Left	18	10.1	12.6	2.5	Clow	455667.55	2193930.60	30.366916944	-81.778950000	
WV2	Valve	Plug	JEA	6	Right	4	9.8	12.6	2.8	M&H	455667.55	2193930.60	30.366916944	-81.778950000	

Sample Hydrant Table:

Hydrant Number	Hydrant Subtype	Facility Owner	Hydrant Manufacture Date (year)	Hydrant Manufacturer	State Plane X Coord (feet)	State Plane Y Coord (feet)	Latitude (Decimal Degrees)	Longitude (Decimal Degrees)	RFID / Barcode Number
WH1	Hydrant	JEA	2017	Mueller	455667.55	2193930.60	30.366916944	-81.778950000	
WH2	Hydrant	JEA	2017	Mueller	455667.55	2193930.60	30.366916944	-81.778950000	
WH3	Hydrant	JEA	2017	Mueller	455667.55	2193930.60	30.366916944	-81.778950000	

Sample Manhole Table:

Manhole Number	Manhole Subtype	Facility Owner	Manhole Type	Manhole Drop Type	Manufacturer or Supplier	Manhole Size (feet	Manhole Material	Manhole Lining Material	Manhole Liner Manufacturer	Rim Elevation (feet)	Invert Elevations (feet) with Directions	State Plane X Coord (feet)	State Plane Y Coord (feet)	Latitude (Decimal Degrees)	Longitude (Decimal Degrees)	Exterior Joint Tape Type & Manufacturer	RFID / Barcode Number
M1	Collection	JEA	A	N/A	Standard Precast	4	Precast	Epoxy		12.9	6.83 North 6.90 South 6.92 SW	455667.5	2193930.6	30.366916944	-81.778950000		
M2	Force main	JEA	A	N/A	Standard Precast	4	Precast	Spectrashield	Spectrashield	12.2	5.88 North	455667.5	2193930.6	30.366916944	-81.778950000		
M3	Collection	JEA	B	Inside	Standard Precast	4	Precast	Epoxy		12.6	6.23 North 8.11 South	455667.5	2193930.6	30.366916944	-81.778950000		

Sample Water Meter Box Table:

Meter Type & Lot Number	Service Type	Proposed Meter Size	Meter Box Subtype	Facility Owner	Meter Box Manufacturer/Supplier	Meter Box Material	State Plane X Coord (feet)	State Plane Y Coord (feet)	Latitude (Decimal Degrees)	Longitude (Decimal Degrees)
WM1	Water	1 ½"	Minor Meter	JEA	Glassmasters	Polymer	455667.55	2193930.60	30.366916944	-81.778950000
WM2	Water	1 ½"	Major Meter	JEA	Glassmasters	Concrete	455667.55	2193930.60	30.366916944	-81.778950000

Sample Wastewater Service Point Table:

Wastewater Service Point Type & Lot Number	Service Point Subtype	Finished Grade Elevation at Service Point (feet)	Top of Pipe Elevation at Service Point (feet)	Depth of Cover (feet)	State Plane X Coord (feet)	State Plane Y Coord (feet)	Latitude (Decimal Degrees)	Longitude (Decimal Degrees)
WWSP1	Customer Point	12.9	10.4	2.5	455667.55	2193930.60	30.366916944	-81.778950000
WWSP2	Customer Point	12.2	8.6	3.6	455667.55	2193930.60	30.366916944	-81.778950000
WWSP3	Customer Point	12.6	10.4	2.5	455667.55	2193930.60	30.366916944	-81.778950000

Sample Locate Wire Box Table:

Locate Box Number	Locate Box Subtype	State Plane X Coord (feet)	State Plane Y Coord (feet)	Latitude (Decimal Degrees)	Longitude (Decimal Degrees)
WH1	Locate Wire Box	455667.55	2193930.60	30.366916944	-81.778950000
WH2	Locate Wire Box	455667.55	2193930.60	30.366916944	-81.778950000
WH3	Locate Wire Box	455667.55	2193930.60	30.366916944	-81.778950000

Sample Reclaimed Meter Box Table:

Meter Type & Lot Number	Service Type	Proposed Meter Size	Meter Box Subtype	Facility Owner	Meter Box Manufacturer/Supplier	Meter Box Material	State Plane X Coord (feet)	State Plane Y Coord (feet)	Latitude (Decimal Degrees)	Longitude (Decimal Degrees)
RM1	Reclaimed	1 ½"	Minor Meter	JEA	Glassmasters	Polymer	455667.55	2193930.60	30.366916944	-81.778950000
RM2	Reclaimed	1 ½"	Minor Meter	JEA	Glassmasters	Polymer	455667.55	2193930.60	30.366916944	-81.778950000
RM3	Reclaimed	1 ½"	Minor Meter	JEA	Glassmasters	Polymer	455667.55	2193930.60	30.366916944	-81.778950000

V. SUBMITTAL TRANSMITTALS AND CHECKLISTS

V.1. AS-BUILT OR RECORD DRAWING CERTIFICATION BLOCKS:

The following information (as applicable) shall be displayed on each page of the As-Built or Record drawing set. For preliminary as-built or record drawing review, all fields must be filled out including signature, date and license numbers. The seal must be supplied on the final approved as builts.

V.1.1. FOR ENGINEERS:

AS-BUILT

INFORMATION PROVIDED BY: _____

Date: _____

Name: _____

Address _____

_____

Phone#: _____

I HEREBY CERTIFY THAT THE

_____	Pavement	_____	Chilled Water
_____	Curb & Gutter	_____	Water Main
_____	Storm & Drainage System	_____	Reclaimed Water Main
_____	Lake or Pond	_____	Force Main
_____	Underdrain Connections	_____	Sanitary Gravity System
		_____	Lift Station

ARE AT THE HORIZONTAL AND VERTICAL LOCATIONS AS SHOWN ON THESE "AS-BUILT" DRAWINGS AND THE ACCOMPANYING ELECTRONIC FILES HAVE BEEN LOCATED AND MAPPED IN ACCORDANCE WITH CHAPTER 471 OF FLORIDA STATUTES, CHAPTER 61G15-23 OF THE FLORIDA BOARD OF PROFESSIONAL ENGINEERS AND THE JEA STANDARDS FOR AS-BUILT DRAWINGS.

ELECTRONIC DRAWING FILE NAME: _____
FILE DATE: _____
DATE OF FIELD SURVEY _____

SIGNATURE: _____
NAME: _____
FLORIDA PROFESSIONAL ENGINEER NO: _____

V.1.2. **FOR SURVEYORS:**

AS-BUILT

INFORMATION PROVIDED BY: _____

Name: _____

Address: _____

_____

Phone#: _____

I HEREBY CERTIFY THAT THE

_____	Pavement	_____	Chilled Water
_____	Curb & Gutter	_____	Water Main
_____	Storm & Drainage System	_____	Reclaimed Water Main
_____	Lake or Pond	_____	Force Main
_____	Underdrain Connections	_____	Sanitary Gravity System
		_____	Lift Station

ARE AT THE HORIZONTAL AND VERTICAL LOCATIONS AS SHOWN ON THESE "AS-BUILT" DRAWINGS AND MEET THE MINIMUM TECHNICAL STANDARDS FOR SURVEYING AND MAPPING IN THE STATE OF FLORIDA AS PER CHAPTER 5J-17.051 AND 5J-17.052, F.A.C.

ELECTRONIC DRAWING FILE NAME: _____

FILE DATE: _____

DATE OF FIELD SURVEY: _____

SURVEYOR'S SIGNATURE: _____

SURVEYOR'S NAME: _____

PSM#: _____

THIS REPORT AND DIGITAL FILE ARE NOT FULL AND COMPLETE WITHOUT THE OTHER AND ARE NOT VALID WITHOUT THE SIGNATURE AND ORIGINAL RAISED SEAL OF THE FLORIDA LICENSED SURVEYOR AND MAPPER.

V.1.3. **FOR CONTRACTORS:**

AS-BUILT

INFORMATION PROVIDED BY:

Date: _____

Name: _____

Address _____

_____

Phone#: _____

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

		_____	Chilled Water
_____	Pavement	_____	Water Main
_____	Curb & Gutter	_____	Reclaimed Water Main
_____	Storm & Drainage System	_____	Force Main
_____	Lake or Pond	_____	Sanitary Gravity System
_____	Underdrain Connections	_____	Lift Station
_____		_____	

ARE IN ACCORDANCE WITH THE APPROVED PLANS AND JEA STANDARDS AND COUNTY SPECIFICATIONS, UNLESS OTHERWISE APPROVED BY THE REGULATORY AGENCY.

CONTRACTOR'S SIGNATURE:_____

CONTRACTOR'S NAME:_____

CONTRACTOR'S STATE UTILITIES LICENSE NUMBER:_____

V.1.4. FOR PROJECT MANAGERS:

RECORD DRAWING

INFORMATION PROVIDED BY:

Date: _____

Name: _____

Address _____

_____

Phone#: _____

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

		_____	Chilled Water
_____	Pavement	_____	Water Main
_____	Curb & Gutter	_____	Reclaimed Water Main
_____	Storm & Drainage System	_____	Force Main
_____	Lake or Pond	_____	Sanitary Gravity System
_____	Underdrain Connections	_____	Lift Station

ARE IN ACCORDANCE WITH THE APPROVED PLANS AND JEA STANDARDS AND COUNTY SPECIFICATIONS, UNLESS OTHERWISE APPROVED BY THE REGULATORY AGENCY. INFRASTRUCTURE IS AT THE HORIZONTAL AND VERTICAL LOCATIONS AS SHOWN ON THESE "RECORD" DRAWINGS.

JEA PROJECT MANAGER'S SIGNATURE:_____

JEA PROJECT MANAGER'S NAME:_____

V.2. JEA AS-BUILT OR RECORD DRAWING SUBMITTAL TRANSMITTAL

Water / Wastewater / Reclaimed Water / Chilled Water Pipes and Pumping

To:	W&S As-Built Submittal Mailbox			
From:				
Phone:		E-mail:		
Company Name:				
Company Address				
Date of Submittal:				
Signature of Submitter Verifying Compliance:				
Project Name:				
Project Type: (Check all that apply)	____ New Development	____ Treatment Plant	____ JEA Installed	____ JEA Contractor
Project Purpose	____ Main Extension	____ Main Replacement	____ Main Relocation	____ Plant Project
JEA Availability Number:			JEA Capital Project Number:	
JEA Project Manager:			JEA PM e-mail:	
Engineering Firm:				
Engineering Contact:				
Engineers Phone:				
Engineers E-mail:				
Contracting Co.:				
Contractor Contact:				
Contractor Phone:				
Contractor E-Mail:				
Surveying Co.:				
Surveyor Contact:				
Surveyors Phone:				
Surveyors E-mail:				
JEA O&M representative:				

Attached:

_____ Water As-Builts & Data Tables – Paper & Electronic
_____ Wastewater As-Builts & Data Tables – Paper & Electronic
_____ Wastewater Pump Station Attribute Tables Electronic
_____ Reclaimed Water As-Builts & Data Tables – Paper & Electronic
_____ Chilled Water As-Builts & Data Tables – Paper & Electronic
_____ As-Built Submittal Checklist filled out by Engineer, Contractor or Surveyor
_____ As-Built Submittal Checklist filled out by JEA Project Manager
_____ Equipment Attribute Worksheets completed

V.3. JEA AS-BUILT OR RECORD DRAWING SUBMITTAL REQUIREMENTS CHECK LIST PIPELINES AND PUMPING STATIONS

Project Name: _____

JEA Availability Number: _____ JEA Capital Project Number: _____

Initial next to each requirement verifying compliance

____ Separate As-Builts or record drawings for water, wastewater, reclaimed water and chilled water

____ On each page of as-built, certification filled out, signed, sealed and dated by surveyor/mapper

____ On each page of as-built, certification filled out, signed and dated by contractor

____ On each page of record drawing, certification filled out, signed and dated by JEA project manager

____ Old lines not built as per design deleted and redrawn as constructed

____ Notes and elevations not struck through, but changed

____ "AS-BUILT" or "RECORD DRAWING" labeled in 1" letters on each page

____ Sheets are 24" x 36" in size

____ Includes all changes by Addendum or Change Order or SWA (Supplemental Work Allowance)

____ As-Built Includes datum & reference to state plane coordinates (Florida East Zone NAD 83, NAVD 88)

____ Vicinity map on cover page

____ Street names on all streets

____ North Arrow on each page

____ Graphic Scale on each page

____ Availability number and/or JEA Capital Project number on each page

____ JEA easements labeled as such, including RE number and Official Records Book and Page (OR #).

____ Title page includes JEA Availability Number and/or JEA Oracle Project Numbers

____ Date of utility installation completion on each page

____ Ownership transition point between JEA and Private system clearly designated on the as-built drawing.

____ Master Plan showing phasing for the entire development

____ Match lines shown for continuation to other sheets

____ Private utilities installed as part of this project shown

POTABLE WATER SYSTEMS

WATER MAINS

_____ Elevations on the main and finished grade shown at:

- Points of connection to the existing system
- Points of crossing over or under wastewater mains, reclaimed mains, chilled water mains or storm drains
- At maximum of 100 ft. intervals
- Where less than 30 inches or greater than 48 inches of cover is provided
- Main stub outs

_____ Each water main section between fittings/valves is shown with pipe size, pipe material and pipe pressure class called out with a leader line pointing to the applicable main or group of mains for mains between fittings less than 10 feet apart.

_____ Pipe size and type indicated on service lateral piping

_____ Beginning and end points of horizontal directional drills located by professional surveyor

_____ HDD (Horizontal directional drill) bore log included showing:

- Bore in plan and profile view
- Bore log on 24" x 36" sheets
- Certified by HDD contractor
- Horizontal and vertical location data at 25 ft. intervals (max)

WATER FITTINGS

_____ Each fitting shows a call out designating fitting number, fitting type (45, tee, etc.) and size with leader pointing to the installed fitting.

_____ Table included with data for each fitting:

- Fitting Number
- Subtype = Fitting Type (see data table file for subtypes)
- Facility Owner (JEA or PRIVATE)
- Fitting Size Primary (Inches)
- Fitting Size Secondary (Inches)
- Fitting Type
- Manufacturer
- Fitting Material (DIMJ, PVC or HDPE)
- Lining Material
- Fitting Top Elevation (feet)
- Final Grade Elevation (feet)
- Fitting Depth (feet)
- State Plane Northing, X Coord
- State Plane Easting, Y Coord
- Latitude
- Longitude

WATER VALVES

Each valve shows a call out designating valve number, valve type, and valve size with leader pointing to the installed valve.

Table included with data for each valve:

- Valve Number (WV, WWV, RV, CV)
- Valve Subtype = Valve, ARV, Backflow, Hydrant
- Valve Type
- Facility Owner (JEA or PRIVATE)
- Valve Size
- Valve Open Direction (left/right)
- Valve number of turns required to open the valve
- Valve Depth to Operating Nut
- Final Grade Elevation (feet)
- Valve Depth to Nut (feet)
- Valve Manufacturer
- State Plane Northing, X Coord
- State Plane Easting, Y Coord
- Latitude
- Longitude
- RFID/Barcode Number (future)

WATER HYDRANTS

Each hydrant shows a call out designating hydrant number with leader pointing to the installed hydrant.

Table included with data for each hydrant:

- Hydrant Number (WH, RH)
- Hydrant Subtype = Hydrant
- Facility Owner (JEA or PRIVATE)
- Hydrant Manufacture Date (year)
- Hydrant Manufacturer
- State Plane Northing, X Coord
- State Plane Easting, Y Coord
- Latitude
- Longitude
- RFID/Barcode Number (future)

WATER METERS AND METER BOXES

_____ Each meter box shall be listed in the data table with meter number matching the Lot #. If no Lot # exists, assign a water meter ID not included in the Lot # series. Show this meter ID at the meter on the as-built and in the data table.

_____ Location of meter boxes indicated and referenced to property lines (not necessary for 2 inch or less residential meters located as per standards).

_____ The size meter to be installed for each meter

_____ Table included with data for each water meter box:

- Meter Box Number
- Proposed Meter Size
- Service Type (Water or Reclaimed Water)
- Meter Subtype = Minor Meter (<2"), Major Meter
- Facility Owner (JEA or PRIVATE)
- Meter box manufacturer
- Meter Box Material
- State Plane Northing, X Coord
- State Plane Easting, Y Coord
- Latitude
- Longitude

WATER LOCATE WIRE BOXES

_____ Each locate wire box shows a call out designating locate wire box number with leader pointing to the installed box

_____ Table included with data for each locate wire box:

- Locate Wire Box Number (WLW-,)
- State Plane Northing, X Coord
- State Plane Easting, Y Coord
- Latitude
- Longitude

WASTEWATER SYSTEMS

GRAVITY MAINS

_____ Elevations on the main and finished grade shown at:

- Points of connection to the existing system
- Points of crossing over or under water mains, reclaimed mains, chilled water mains, wastewater mains or storm drains
- Lateral (service) end points
- Main stub outs

_____ Vertical separation called out at crossings with water mains

_____ Plan and profile drawings provided showing pipe and manholes

_____ Each gravity wastewater main section between manholes is shown with pipe size, pipe material, pipe pressure class, pipe length and slope called out with a leader line pointing to the applicable main.

_____ Pipe type and size and finished grade elevations on service lateral piping shown.

_____ The location of the service point for each lateral located from the side property line or by station and offset.

_____ Table included with data for each gravity main:

- Sewer Pipe Run Number
- Sewer Pipe Subtype = Collection, Trunk
- Facility Owner (JEA or PRIVATE)
- Pipe Size (Inches)
- Pipe Class (SDR26, etc)
- Pipe Material (PVC, etc.)
- Pipe Manufacturer
- Pipe Length (feet)
- Downstream Pipe Invert Elevation (feet)
- Downstream Grade Elevation at Invert (feet)
- Upstream Pipe Invert Elevation (feet)
- Upstream Grade Elevation at Invert (feet)
- Slope (ft/ft)

GRAVITY FITTINGS

_____ Each fitting shall be listed in the sewer fitting data table with fitting number matching the Lot #. If no Lot # exists, assign a fitting number ID not included in the Lot # series. Show this fitting number ID at the fitting on the as-built and in the fitting data table.

_____ Table included with data for each fitting:

- Fitting Number (matching lot number)
- Subtype = Fitting Type (see data table file for subtypes)
- Facility Owner (JEA or PRIVATE)
- Fitting Size Primary (Inches)
- Fitting Size Reducer (Inches)
- Manufacturer
- Fitting Material (DI, PVC or HDPE)
- Lining Material
- Fitting Top Elevation (feet)
- Final Grade Elevation (feet)
- State Plane Northing, X Coord
- State Plane Easting, Y Coord
- Latitude
- Longitude

MANHOLES & CLEANOUTS

_____ Elevations of inverts and north rim of top of manhole covers shown for all manholes at the manhole

_____ Manholes and cleanouts labeled with number at manhole or cleanout

_____ Air release valve manholes shown and listed in manhole data table (if applicable)

_____ Table with the following data for each manhole:

- Manhole Number
- Manhole Subtype = Collection, Force main, Low Pressure, Trunk, ARV
- Facility Owner (JEA or PRIVATE)
- Manhole Type (A through J)
- Manhole Drop Type (Inside or Outside)
- Manufacturer/Supplier
- Manhole Size (feet)
- Manhole Material
- Manhole Lining Material
- Manhole Lining Manufacturer
- Rim Elevation (feet)
- Invert Elevations (feet) with Directions
- State Plane Northing, X Coord
- State Plane Easting, Y Coord
- Latitude
- Longitude
- Exterior Joint Tape Type & Manufacturer
- RFID/Barcode Number (future)

WASTEWATER SERVICE POINTS

_____ Each service point (sewer lateral end point) shall be listed in the data table with meter number matching the Lot #. If no Lot # exists, assign a water meter ID not included in the Lot # series. Show this meter ID at the meter on the as-built and in the data table.

_____ Table included with data for each wastewater service point:

- Wastewater Service Point Number
- Wastewater Service Point Subtype = Customer point, Major Meter
  (See data table file for subtypes)
- Finished Grade Elevation (feet)
- Top of Pipe Elevation (feet)
- Depth of Cover (feet)
- State Plane Northing, X Coord
- State Plane Easting, Y Coord
- Latitude
- Longitude

WASTEWATER FORCE MAINS

_____ Elevations on the main and finished grade shown at:

- Points of connection to the existing system
- Points of crossing over or under water mains, reclaimed mains, chilled water mains, wastewater mains or storm drains
- At maximum of 100 ft. intervals
- Where less than 30 inches or greater than 48 inches of cover is provided.
- Main stub-outs

_____ Each force main section between fittings/valves is shown with pipe size, pipe material and pipe pressure class called out with a leader line pointing to the applicable main or group of mains for mains between fittings less than 10 feet apart.

Beginning and end points of HDD (horizontal directional drills) located by professional surveyor

_____ HDD bore log included showing:

- Bore in plan and profile view
- Bore log on 24” x 36” sheets
- Certified by HDD contractor
- Horizontal and vertical location data continuous or at no more than 25 ft. intervals

FORCE MAIN FITTINGS

Each fitting shows a call out designating fitting number, fitting type (45, tee, etc.) and size with leader pointing to the installed fitting.

Table included with data for each fitting:

- Fitting Number
- Subtype = Fitting Type (see data table file for subtypes)
- Facility Owner (JEA or PRIVATE)
- Fitting Size Primary (Inches)
- Fitting Size Reducer (Inches)
- Manufacturer
- Fitting Material (DI, PVC or HDPE)
- Lining Material
- Fitting Top Elevation (feet)
- Final Grade Elevation (feet)
- State Plane Northing, X Coord
- State Plane Easting, Y Coord
- Latitude
- Longitude

WASTEWATER VALVES

Each valve shows a call out designating valve number, valve type, and valve size with leader pointing to the installed valve.

Table included with data for each valve:

- Valve Number (WV, WWV, RV, CV)
- Valve Subtype = Valve, ARV, Backflow, Hydrant
- (See data table file for subtypes)
- Valve Type
- Facility Owner (JEA or PRIVATE)
- Valve Size
- Valve Open Direction (left/right)
- Valve number of turns required to open the valve
- Valve Depth to Operating Nut
- Final Grade Elevation (feet)
- Valve Depth to Nut (feet)
- Valve Manufacturer
- State Plane Northing, X Coord
- State Plane Easting, Y Coord
- Latitude
- Longitude
- RFID/Barcode Number (future)

WASTEWATER LOCATE WIRE BOXES

____ Each locate wire box shows a call out designating locate wire box number with leader pointing to the installed box

____ Table included with data for each locate wire box:

- Locate Wire Box Number (WLW-,)
- State Plane Northing, X Coord
- State Plane Easting, Y Coord
- Latitude
- Longitude

WASTEWATER PUMPING STATIONS

_____ Pump Station sheet is digital (not scanned and marked up) and legible when zoomed in.

_____ All As-Built changes are marked with AB and clouded. Corrected in AUTOCAD file, not crossed out with the new numbers.

_____ All pump station data/information is included on first sheet and the station layout with measurements, elevations and GPS coordinates on second sheet.

_____ All utilities within the pump station site are located relative to property lines.

_____ Elevations (*and GPS coordinates) indicated at:

- Invert(s)
- Wet well Top (rim elevation) *
- Wet well bottom
- Concrete slab station corners
- Underground piping, valves* and fittings*

_____ Measurements of panels & equipment relative to the concrete edges of station at:

- Control Panel Rack
- Power Distribution Rack
- Demarcation Box(s)
- Flow Meter Panel

_____ Above and below ground piping

_____ Wet Well shown and dimensioned from property lines

_____ Generator/Pony pump shown and information filled out

_____ Driveway shown and dimensioned from property lines

_____ All materials, sizes of lines and fittings associated with pump station are indicated on drawings.

_____ All buried electrical conduit labeled and located, including electrical service from utility transformer to station meter and to control panel.

_____ Pump information has been checked for completeness and accuracy

_____ MCC Panel chart is filled out.

_____ Schedule of elevation chart is filled out entirely.

_____ Station physical address is indicated in Pump Station Information box.

_____ Privately owned pump stations will provide pump model info for modeling purposes.

RECLAIMED WATER SYSTEMS

RECLAIMED WATER MAINS

____ Elevations on the main and finished grade shown at:
- Points of connection to the existing system
- Points of crossing over or under water mains, reclaimed mains, chilled water mains, wastewater mains or storm drains
- At maximum of 100 ft. intervals
- Where less than 30 inches or greater than 48 inches of cover is provided
- Main stub-outs

____ Each reclaimed water main section between fittings/valves is shown with pipe size, pipe material and pipe pressure class called out with a leader line pointing to the applicable main or group of mains for mains between fittings less than 10 feet apart.

____ Pipe size and type indicated on service lateral piping

____ Location of reclaim signage indicating reclaim water in use

____ Location of meter boxes indicated and referenced to property lines (not necessary for 2 inch or less residential meters located as per standards).

____ Beginning and end points of horizontal directional drills located by professional surveyor

____ HDD (Horizontal directional drill) bore log included showing:
- Bore in plan and profile view
- Bore log on 24" x 36" sheets
- Certified by HDD contractor
- Horizontal and vertical location data at 25 ft. intervals (max)

RECLAIMED WATER FITTINGS

____ Each fitting shows a call out designating fitting number, fitting type (45, tee, etc.) and size with leader pointing to the installed fitting.

____ Table included with data for each fitting:
- Fitting Number
- Subtype = Fitting Type (see data table file for subtypes)
- Facility Owner (JEA or PRIVATE)
- Fitting Size Primary (Inches)
- Fitting Size Reducer (Inches)
- Manufacturer
- Fitting Material (DI, PVC or HDPE)
- Lining Material
- Fitting Top Elevation (feet)
- Final Grade Elevation (feet)
- State Plane Northing, X Coord
- State Plane Easting, Y Coord
- Latitude
- Longitude

RECLAIMED WATER VALVES

_____ Each valve shows a call out designating valve number, valve type, and valve size with leader pointing to the installed valve.

_____ Table included with data for each valve:

- Valve Number (WV, WWV, RV)
- Valve Subtype = Valve, ARV, Backflow, Hydrant
  (See data table file for subtypes)
- Valve Type
- Facility Owner (JEA or PRIVATE)
- Valve Size
- Valve Open Direction (left/right)
- Valve number of turns required to open the valve
- Operating Nut Elevation (feet)
- Final Grade Elevation (feet)
- Depth to Op Nut (feet)
- Current Status (Open/Closed)
- Valve Manufacturer
- State Plane Northing, X Coord
- State Plane Easting, Y Coord
- Latitude
- Longitude
- RFID/Barcode Number (future)

RECLAIMED WATER HYDRANTS

_____ Each hydrant shows a call out designating hydrant number with leader pointing to the installed hydrant.

_____ Table included with data for each hydrant:

- Hydrant Number (WH, RH)
- Hydrant Subtype = Hydrant
- Facility Owner (JEA or PRIVATE)
- Hydrant Manufacture Date (year)
- Hydrant Manufacturer
- State Plane Northing, X Coord
- State Plane Easting, Y Coord
- Latitude
- Longitude
- RFID/Barcode Number (future)

RECLAIMED WATER METER BOXES

____ Each meter box shall be listed in the data table with meter number matching the Lot #. If no Lot # exists, assign a reclaimed water meter ID not included in the Lot # series. Show this meter ID at the meter on the as-built and in the data table.

____ The size meter to be installed for each meter

____ Table included with data for each meter box:

- Meter Box Number
- Proposed Meter Size
- Service Type (Water or Reclaimed Water)
- Meter Subtype = Minor Meter (<2"), Major Meter
- Facility Owner (JEA or PRIVATE)
- Meter box manufacturer
- Meter Box Material
- State Plane Northing, X Coord
- State Plane Easting, Y Coord
- Latitude
- Longitude

RECLAIMED WATER LOCATE WIRE BOXES

____ Each locate wire box shows a call out designating locate wire box number with leader pointing to the installed box

____ Table included with data for each locate wire box:

- Locate Wire Box Number (WLW-,)
- State Plane Northing, X Coord
- State Plane Easting, Y Coord
- Latitude
- Longitude

CHILLED WATER SYSTEMS

CHILLED WATER MAINS

____ Elevations on the main and finished grade shown at:
- Points of connection to the existing system
- Points of crossing over or under water mains, reclaimed mains, chilled water mains, wastewater mains or storm drains
- At maximum of 100 ft. intervals
- Where less than 30 inches or greater than 48 inches of cover is provided

____ Each chilled water main section between fittings/valves is shown with pipe size, pipe material and pipe pressure class called out with a leader line pointing to the applicable main or group of mains for mains between fittings less than 10 feet apart.

____ Each pipe labeled as to supply water or return water

____ Pipe size and type indicated on service lateral piping

____ Location of lateral end points indicated and referenced to property lines.

____ Beginning and end points of horizontal directional drills located by professional surveyor

____ HDD (Horizontal directional drill) bore log included showing:
- Bore in plan and profile view
- Bore log on 24" x 36" sheets
- Certified by HDD contractor
- Horizontal and vertical location data at 25 ft. intervals (max)

CHILLED WATER FITTINGS

____ Each fitting shows a call out designating fitting number, fitting type (45, tee, etc.) and size with leader pointing to the installed fitting.

____ Table included with data for each fitting:
- Fitting Number
- Subtype = Fitting Type (see data table file for subtypes)
- Facility Owner (JEA or PRIVATE)
- Fitting Size Primary (Inches)
- Fitting Size Reducer (Inches)
- Manufacturer
- Fitting Material (DI, PVC or HDPE)
- Lining Material
- Fitting Top Elevation (feet)
- Final Grade Elevation (feet)
- State Plane Northing, X Coord
- State Plane Easting, Y Coord
- Latitude
- Longitude
- RFID/Barcode Number (future)

CHILLED WATER VALVES

____ Each valve shows a call out designating valve number, valve type, and valve size with leader pointing to the installed valve.

____ Table included with data for each valve:

- Valve Number (WV, WWV, RV)
- Valve Subtype = Valve, ARV, Backflow, Hydrant
  (See data table file for subtypes)
- Valve Type
- Facility Owner (JEA or PRIVATE)
- Valve Size
- Valve Open Direction (left/right)
- Valve number of turns required to open the valve
- Operating Nut Elevation (feet)
- Final Grade Elevation (feet)
- Depth to Op Nut (feet)
- Current Status (Open/Closed)
- Valve Manufacturer
- State Plane Northing, X Coord
- State Plane Easting, Y Coord
- Latitude
- Longitude
- RFID/Barcode Number (future)

CHILLED WATER LOCATE WIRE BOXES

____ Each locate wire box shows a call out designating locate wire box number with leader pointing to the installed box

____ Table included with data for each locate wire box:

- Locate Wire Box Number (WLW-,)
- State Plane Northing, X Coord
- State Plane Easting, Y Coord
- Latitude
- Longitude

STORM DRAIN SYSTEMS

STORM DRAIN

____ Runs of storm wastewaters identified with size, material and slope (i.e., 300' of 15" RCP at S=.004)

____ Elevations given for the north rim of the top of all manhole covers and inlets and catch basins and all manhole, inlet and catch basin inverts

____ All storm drain manholes, inlets and catch basin types identified

V.4. INSPECTION CHECKLIST: LOCATE WIRE BOXES

Project Name: _____

Street/Intersection/Address Location: _____

Station: _____ Offset: _____

Check the following as applicable

Water	☐	
Wastewater	☐	
Reclaimed	☐	
Location:	☐	Paved Area
	☐	Grassed Area
Cover at Finish Grade:	☐	Cover at finish grade
	☐	Cover above/below finish grade-adjust per spec.
Locate wire accessible in box:	☐	Yes
	☐	No, full of debris – excavate debris
Locate wire properly color coded:	☐	Yes
	☐	No—replace per spec
Locate wire signal verified:	☐	Yes
	☐	No—repair per spec

Comments:

_____

Contractor Representative:

_____

Signature *Print name*

JEA Inspector:

_____

Signature *Print name*

JEA O&M representative:

_____

Signature *Print name*

Commissioned this date: _____

V.5. JEA TRACER WIRE CERTIFICATION FORM

Project Name/Number: _____

Date(s) Tested: _____

Installed by Contractor: _____

Name of Tester: _____

Testing Company: _____

JEA Inspector: _____

Pass: _____

Fail: _____

Continuity/Signal strength between access points:

Marker Balls Installed / Located
Color is for the utility type of Marker ball

Access pt #1 to access pt #2:						
Access pt #3 to access pt #4:			Installed		Located	
Access pt #5 to access pt #6:			Installed		Located	
Access pt #7 to access pt #8:			Installed		Located	
Access pt #9 to access pt #10:			Installed		Located	

Total footage tested	Water	Sewer / FM	Reclaimed Water	Fiber Optic

If any faults found List below (please indicate utility type and location)

Fault # 1:	
Fault # 2:	
Fault # 3:	
Fault # 4:	
Fault # 5:	

V.6. JEA RECORD DRAWING SUBMITTAL TRANSMITTAL

Water/ Wastewater/Reclaimed Treatment Plants, Wells and Facilities

To: W&S As-Built Submittal Mailbox
From: _____
Phone: _____
E-mail: _____
Company Name: _____
Date of Submittal: _____
Signature of Submitter Verifying Compliance: _____

Project Name: _____
Project Numbers: _____
JEA Project Manager: _____
JEA PM E-mail: _____

Engineering Firm: _____
Engineering Contact: _____
Engineers Phone: _____
Engineers E-mail: _____

Contracting Co.: _____
Contractor Contact: _____
Contractor Phone: _____
Contractor E-Mail: _____

Surveying Co.: _____
Surveyor Contact: _____
Surveyors Phone: _____
Surveyors E-mail: _____

Attached:
_____ As-Builts - Paper Copy & Electronic
_____ Record Drawing Submittal Checklist filled out by Engineer, Contractor or Surveyor
_____ Record Drawing Submittal Checklist filled out by JEA Project Manager
_____ Equipment Attribute Worksheets completed

V.7. JEA RECORD DRAWING SUBMITTAL REQUIREMENTS CHECK LIST

Treatment Plants

Project Name: _____

Project Numbers: _____

Initial next to each requirement verifying compliance

_____ On each page of record drawing, certification filled out, signed and dated by the project manager

_____ Improvements not built as per design are redrawn as constructed

_____ "RECORD DRAWING" labeled in 1" letters on each sheet

_____ Sheets are 24" x 36" in size

_____ Includes all changes by Addendum or SWA (Supplemental Work Allowance), or Change Order

_____ Includes datum & reference to state plane coordinates (Florida East Zone NAD 83, NAVD 88)

_____ Vicinity map on cover page

_____ Title page and each page includes JEA Oracle Project Number(s)

_____ Provide paper and electronic copies of Record Drawing (.dwg and .pdf formats)

_____ Street names on all streets

_____ North Arrow on each page

_____ Graphic Scale on each page

_____ JEA Capital Project number on each page

_____ JEA easements labeled as such, including RE number and Official Records Book and Page (OR #).

_____ Date of utility installation completion on each page

PLANT INFRASTRUCTURE

Provide and incorporate into record drawings the horizontal and vertical record locations of improvements, including the following:

_____ Corner coordinates of rectangular or square buildings, structures, and tanks.

_____ Center coordinates of circular buildings, structures, and tanks.

_____ Building floor elevations.

_____ Floor elevations of structures and tanks as required to define floor slope.

_____ Top elevations of structures and tanks and weirs.

_____

_____ Channel floor elevations at each change in slope.

_____ Channel top elevations.

_____ Manhole center coordinates for electrical duct banks, sanitary sewer, storm sewer, etc.

_____ Pipe coordinates at changes in direction.

_____ Coordinates of all buried valves, and fittings.

_____ All underground piping invert or centerline elevations.

_____ All underground pipe invert or centerline elevations at fittings.

_____ Pipe invert, or centerline, elevations at crossing with another pipe.

_____ Invert or top of pipe elevations and coordinates of existing pipe at crossing with new underground pipe showing Separations

_____ Invert elevations of manhole pipe inlets and outlets.

_____ Duct bank, storm sewer, sanitary sewer coordinates and elevations at changes in direction or offset measurements from existing Structures or Roadways.

_____ Top and bottom elevations of duct banks at manholes and hand holes showing ID numbers

_____ Other horizontal and vertical record data pertinent to completed Work.

_____ Location of internal utilities and appurtenances concealed in the construction Referenced to Structure or Roadway off set dimensions

_____ Details not indicated on the original contract drawings

_____ Depths of various elements of foundations in relation to finish first floor elevations

_____ Location, elevation, and datum of Benchmark used.

_____ Elevation of all Pump and Housekeeping Pads

_____ Weir Elevations

_____ Field changes of dimensions and or details as relates to; but not limited the following:

- Interior equipment
- Architectural and structural changes, including relocation of doors, windows, etc.
- Architectural schedule changes

_____ Hydraulic profile sheet--update control elevations and liquid elevations for low flow, average flow, and peak hourly flow conditions including return flows (as required based on equipment selection or field changes)

_____ Runs of storm sewers identified with size, material and slope (i.e., 300' of 15" RCP at S=.004)

_____ Ground surface record/information shall include the following:

- Spot elevations should be shown at a minimum 100-foot rectangular grid, sufficient to show all the important topographic features
- All elevations shown on the construction drawings shall be confirmed or amended on the record drawing markups if finished elevations are different.

WELL INFRASTRUCTURE

WELLS

_____Elevation of top casing and at grade

_____Depth of casing below land surface

_____Diameter, material and thickness of casing(s)

_____Depth of well below land surface

_____Location of well, in latitude and longitude

WELLHEAD

_____Wellhead pad finished elevation

_____All materials and sizes of lines and fittings indicated on drawings

_____All buried electrical conduit labeled and located

_____Pipe coordinates at changes in direction

_____Coordinates of buried valves, tees and fittings

_____Other horizontal and vertical record data pertinent to completed Work

_____Location of internal utilities and appurtenances concealed in the construction referenced to visible accessible features

_____Field changes of dimensions and or details

_____Location, elevation, and datum of Benchmark used

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