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 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 submittal check lists, signed and completely filled out

I.6.1.4. As-built submittal transmittal form

I.6.1.5. 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 drawing submittal check lists

I.6.2.4. Record drawing submittal transmittal form

I.6.2.5. 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 letters and shall be submitted on 24" X 36" PDF 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. All drawings are to be combined into one continuous PDF, with utilities separated into pages/sections (i.e., FM/Sanitary on one sheet, Reclaimed on one sheet, Water on one sheet, and Chilled Water on one sheet). 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 shall include an "AS-BUILT" notice in Bold font approximately 1 inch tall, located at the top center of the sheet with the full Project Name provided underneath and Address (if applicable). The Vicinity Map is to be placed in the center of the cover sheet. (Reference V.1.10 for the Vicinity Map requirements). The Cover sheet and each As-Built sheet shall include the JEA Availability Number and/or the JEA Capital Project Number for each commodity – Water, Wastewater, Reclaimed Water, and Chilled Water. These numbers shall be approximately .3 inches tall. A JEA representative will provide the JEA Capital 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 JEA Capital Project Numbers have not been modified/added throughout the project. The Cover sheet and each As-Built sheet will also include the Certifications to be filled out, digitally signed, and sealed by the surveyor/mapper. The Cover sheet will also include the Legend, Surveyor Notes, the datum & reference to state plane coordinates (Florida East Zone NAD 83, NAVD 88), general notes (any specific utility notes are to be provided on the utility sheets), the date of utility installation completion, and a Title block.

II.1.20. A call out shall be provided identifying the points of connection of the new project to the existing JEA infrastructure.

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, fittings, points along pipe (point of connection and top of pipe elevations), and pipe crossings. 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, fitting, points along pipe, and pipe crossing 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 shown, with size indicated, 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. 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. The pipe lining manufacturer and material shall be noted, if applicable.

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 (GM#)
- Sewer Pipe Subtype = Collection, Trunk
- Facility Owner (JEA or PRIVATE)

- Pipe Size (Inches)
- Pipe Class (SDR26, etc)
- Pipe Manufacturer
- Pipe Material (PVC, etc.)
- Pipe Lining Manufacturer
- Pipe Lining Material
- 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 (percent)

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.1.6. Locations where the pipe is exposed aboveground, the beginning and ending points of the aboveground pipe shall be shown in the Points Along Pipe table, with Pipe Orientation noted as Aboveground.

IV.1.7. Points along Pipe locations at points of connection and 100' maximum intervals on pressurized pipes 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.

- Pipe Location Number (WPOC#, WWPOC#, RPOC#, WWPOL#, etc)
- Pipe Location (Point of Connection, Top of Pipe, Top of Casing)
- Pipe Subtype
- Facility Owner
- Pipe Size
- Pipe Orientation (Underground/Aboveground)
- Pipe Class
- Pipe Manufacturer
- Pipe Material
- Pipe Lining Manufacturer
- Pipe Lining Material
- Finished Grade Elevation (feet)
- Pipe Top Elevation (feet)
- Pipe Cover (feet)
- X Coord (State Plane Easting feet)
- Y Coord (State Plane Northing feet)
- Latitude (Decimal Degrees)
- Longitude (Decimal Degrees)

IV.1.8. Points along Pipe tables 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.1.9. Each top of pipe location shall show a call out on the plan view designating the top of pipe number that corresponds with the points along pipe table.

IV.1.10. Points of conflicting utility crossings 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.

- Crossing Number
- Upper Pipe Type
- Upper Pipe Size (inches)
- Finished Grade Elevation (feet)
- Upper Pipe Top Elevation (feet)
- Cover to Top of Upper Pipe (feet)
- Upper Pipe Bottom Elevation (feet)
- Lower Pipe Type
- Lower Pipe Size (inches)
- Lower Pipe Top Elevation (feet)
- Cover to Top of Lower Pipe (feet)
- Separation Between Pipes (feet)
- X Coord (State Plane Easting feet)
- Y Coord (State Plane Northing feet)
- Latitude (Decimal Degrees)
- Longitude (Decimal Degrees)

IV.1.11. Pipe Crossing tables 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.1.12. Each pipe crossing location shall show a call out on the plan view designating the crossing number, conflicting pipe types, and the separation between pipes in feet.

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. All fittings must be clearly shown on the main. 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 (WF#, WWF#, RF#, CF#)
- Subtype = Fitting Type (see data table file for subtypes)
- Facility Owner (JEA or PRIVATE)
- Fitting Size Primary (Inches)
- Fitting Size Secondary (Inches)
- Manufacturer
- Fitting Material (DIMJ, PVC or HDPE)
- Lining Manufacturer
- Lining Material
- Fitting Top Elevation (feet)
- Finished Grade Elevation (feet)
- Fitting Depth (feet)
- X Coord (State Plane Easting feet)
- Y Coord (State Plane Northing feet)
- Latitude (in Decimal Degrees)
- Longitude (in Decimal Degrees)

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. All valves should be clearly shown on the main.

IV.3.2. Air release valves in manholes called out and shown on plan view and included in valve table.

IV.3.3. 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 Orientation (Underground/Aboveground)
- Valve Open Direction (left/right)
- Valve number of turns required to open the valve
- Valve Nut Elevation (feet)
- Finished Grade Elevation (feet)
- Depth to Nut (feet)

- Valve Manufacturer
- X Coord (State Plane Easting feet)
- Y Coord (State Plane Northing feet)
- Latitude (in Decimal Degrees)
- Longitude (in Decimal Degrees)

IV.3.4. 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#)
- Facility Owner (JEA or PRIVATE)
- Hydrant Manufacture Date (year)
- Hydrant Manufacturer
- X Coord (State Plane Easting feet)
- Y Coord (State Plane Northing feet)
- Latitude (in Decimal Degrees)
- Longitude (in Decimal Degrees)
- RFID/Barcode Number

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 (MH#)
- 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
- Lowest Invert Elevation (feet)
- Exterior Joint Tape Type
- Exterior Joint Tape Manufacturer
- X Coord (State Plane Easting feet)
- Y Coord (State Plane Northing feet)
- Latitude (in Decimal Degrees)
- Longitude (in Decimal Degrees)
- RFID/Barcode Number

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
- Meter Subtype = Minor Meter (<2”), Major Meter, Irrigation Meter
- Facility Owner (JEA or PRIVATE)
- Meter Box Orientation (Underground/Aboveground)
- Meter Box Manufacturer
- Meter Box Material
- X Coord (State Plane Easting feet)
- Y Coord (State Plane Northing feet)
- Latitude (in Decimal Degrees)
- Longitude (in Decimal Degrees)

**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, Sewer Flow Meter
  (See data table file for subtypes)
- Finished Grade Elevation (feet)
- Top of Pipe Elevation (feet)
- Depth of Cover (feet)
- X Coord (State Plane Easting feet)
- Y Coord (State Plane Northing feet)
- Latitude (in Decimal Degrees)
- Longitude (in Decimal Degrees)

**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 wastewater service point and 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 (WL, WWL, RL, CL)
- Locate Box Subtype
- X Coord (State Plane Easting feet)
- Y Coord (State Plane Northing feet)
- Latitude (in Decimal Degrees)
- Longitude (in Decimal Degrees)

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 Number	Sewer Pipe Subtype	Facility Owner	Pipe Size (inches)	Pipe Class	Pipe Manufacturer	Pipe Material	Pipe Lining Manufacturer	Pipe Lining Material	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)
GM1	Collection	JEA	8	SDR26	US Pipe	PVC	US Pipe	Epoxy	289.56	26.94	32.3	28.9	32.1	0.004
GM2	Collection	JEA	8	SDR26	US Pipe	PVC	US Pipe	Epoxy	299.34	24.86	32.4	26.81	32.3	0.0039
GM3	Collection	JEA	12	SDR26	US Pipe	PVC	US Pipe	Epoxy	375.76	23.60	33.2	24.73	32.4	0.003

Sample Pipe Crossing Table:

Crossing Number	Upper Pipe Type	Upper Pipe Size (inches)	Finished Grade Elevation (feet)	Upper Pipe Top Elevation (feet)	Cover to Top of Upper Pipe (feet)	Upper Pipe Bottom Elevation (feet)	Lower Pipe Type	Lower Pipe Size (inches)	Lower Pipe Top Elevation (feet)	Cover to Top of Lower Pipe (feet)	Separation Between Pipes (feet)	State Plane X Coord (feet)	State Plane Y Coord (feet)	Latitude (Decimal Degrees)	Longitude (Decimal Degrees)
CR1	Potable Water	8	35.50	32.10	3.40	31.35	Gravity Sewer	8	25.92	9.58	5.43	455667.55	2193930.60	30.366916	81.778950
CR2	Potable Water	12	33.20	30.20	3.00	29.12	Force Main	4	26.81	6.39	2.30	455667.55	2193930.60	30.366916	81.778950

Sample Water Points along Pipe Table:

Pipe Location Number	Pipe Location	Pipe Subtype	Facility Owner	Pipe Size (inches)	Pipe Orientation	Pipe Class	Pipe Manufacturer	Pipe Material	Pipe Lining Manufacturer	Pipe Lining Material	Finished Grade Elevation (feet)	Pipe Top Elevation (feet)	Pipe Cover (feet)	State Plane X Coord (feet)	State Plane Y Coord (feet)	Latitude (Decimal Degrees)	Longitude (Decimal Degrees)
WPOC1	Point of Connection	Distribution Main	JEA	8	Underground	DR18	Diamond Plastics	PVC	N/A	N/A	23.50	19.73	3.77	455667.55	2193930.60	30.366916	81.778950
WPOL1	Top of Pipe	Distribution Main	JEA	8	Aboveground	PC150	US Pipe	DI	US Pipe	Cement	23.20	19.76	3.44	455667.55	2193930.60	30.366916	81.778950
WPOL2	Top of Pipe	Distribution Main	JEA	8	Aboveground	PC150	US Pipe	DI	US Pipe	Cement	23.20	19.76	3.44	455667.55	2193930.60	30.366916	81.778950
WPOL3	Top of Pipe	Distribution Main	JEA	12	Underground	DR18	Diamond Plastics	PVC	N/A	N/A	23.10	19.90	3.20	455667.55	2193930.60	30.366916	81.778950

Sample Wastewater Points along Pipe Table:

Pipe Location Number	Pipe Location	Pipe Subtype	Facility Owner	Pipe Size (inches)	Pipe Orientation	Pipe Class	Pipe Manufacturer	Pipe Material	Pipe Lining Manufacturer	Pipe Lining Material	Finished Grade Elevation (feet)	Pipe Top Elevation (feet)	Pipe Cover (feet)	State Plane X Coord (feet)	State Plane Y Coord (feet)	Latitude (Decimal Degrees)	Longitude (Decimal Degrees)
WWPOC1	Point of Connection	Collection Main	JEA	8	Underground	SDR26	Diamond Plastics	PVC	N/A	N/A	23.5	17.73	5.77	455667.55	2193930.60	30.366916	81.778950
WWPOC2	Point of Connection	Force Main	JEA	8	Underground	DR18	Diamond Plastics	PVC	N/A	N/A	23.2	19.76	3.44	455667.55	2193930.60	30.366916	81.778950
WWPOL1	Top of Pipe	Force Main	JEA	12	Underground	DR18	Diamond Plastics	PVC	N/A	N/A	23.1	19.90	3.20	455667.55	2193930.60	30.366916	81.778950
WWPOL2	Top of Pipe	Force Main	JEA	12	Underground	DR18	Diamond Plastics	PVC	N/A	N/A	23.1	19.80	3.30	455667.55	2193930.60	30.366916	81.778950

Sample Reclaimed Points along Pipe Table:

Pipe Location Number	Pipe Location	Pipe Subtype	Facility Owner	Pipe Size (inches)	Pipe Orientation	Pipe Class	Pipe Manufacturer	Pipe Material	Pipe Lining Manufacturer	Pipe Lining Material	Finished Grade Elevation (feet)	Pipe Top Elevation (feet)	Pipe Cover (feet)	State Plane X Coord (feet)	State Plane Y Coord (feet)	Latitude (Decimal Degrees)	Longitude (Decimal Degrees)
RPOC1	Point of Connection	Reclaimed Main	JEA	8	Underground	DR18	Diamond Plastics	PVC	N/A	N/A	23.5	19.73	3.77	455667.55	2193930.60	30.366916	81.778950
RPOL1	Top of Pipe	Reclaimed Main	JEA	12	Underground	DR18	Diamond Plastics	PVC	N/A	N/A	23.1	19.90	3.20	455667.55	2193930.60	30.366916	81.778950
RPOL2	Top of Pipe	Reclaimed Main	JEA	12	Underground	DR18	Diamond Plastics	PVC	N/A	N/A	23.1	19.80	3.30	455667.55	2193930.60	30.366916	81.778950

Sample Fitting Table:

Fitting Number	Fitting Subtype	Facility Owner	Fitting Size Primary (inches)	Fitting Size Secondary (inches)	Manufacturer	Fitting Material	Lining Manufacturer	Lining Material	Fitting Top Elev. (feet)	Finished Grade Elev. (feet)	Fitting Depth (feet)	State Plane X Coord (feet)	State Plane Y Coord (feet)	Latitude (Decimal Degrees)	Longitude (Decimal Degrees)
WF1	Elbow 90	JEA	8		American	DI	American	Epoxy	9.4	12.5	3.1	455667.55	2193930.60	30.366916	-81.778950
WF2	Tee	JEA	8	4	American	DI	American	Epoxy	9.4	12.5	3.1	455667.55	2193930.60	30.366916	-81.778950
WF3	Reducer	Private	12	6	American	DI	American	Epoxy	8.4	11.5	3.1	455667.55	2193930.60	30.366916	-81.778950

Sample Water Valve Table:

Valve Number	Valve Subtype	Valve Type	Facility Owner	Valve Size	Valve Orientation	Valve Open Direction	Turns to Open	Valve Nut Elevation (feet)	Finished Grade Elevation (feet)	Depth to Nut (feet)	Valve Manufacturer	State Plane X Coord (feet)	State Plane Y Coord (feet)	Latitude (Decimal Degrees)	Longitude (Decimal Degrees)
WV1	Valve	Gate	JEA	6	Underground	Left	18	10.1	12.6	2.5	Clow	455667.55	2193930.60	30.366916	-81.778950
WV2	Valve	Plug	JEA	6	Underground	Right	4	9.8	12.6	2.8	M&H	455667.55	2193930.60	30.366916	-81.778950

Sample Hydrant Table:

Hydrant Number	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	JEA	2017	Mueller	455667.55	2193930.60	30.366916	-81.778950	
WH2	JEA	2017	Mueller	455667.55	2193930.60	30.366916	-81.778950	
WH3	JEA	2017	Mueller	455667.55	2193930.60	30.366916	-81.778950	

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 Lining Manufacturer	Rim Elevation (feet)	Invert Elevations (feet) with Directions	Lowest Invert Elevation (feet)	Exterior Joint Tape Type	Exterior Joint Tape Manufacturer	State Plane X Coord (feet)	State Plane Y Coord (feet)	Latitude (Decimal Degrees)	Longitude (Decimal Degrees)	RFID / Barcode Number
MH1	Collection	JEA	A	N/A	Standard Precast	4	Precast	Epoxy	Spectrashield	12.9	6.83 North 6.90 South 6.92 SW	6.83	Joint Wrap	Con Seal	455667.5	2193930.6	30.366916	-81.778950	
MH2	Force main	JEA	A	N/A	Standard Precast	4	Precast	Spectrashield	Spectrashield	12.2	5.88 North	5.88	Joint Wrap	Con Seal	455667.5	2193930.6	30.366916	-81.778950	
MH3	Collection	JEA	B	Inside	Standard Precast	4	Precast	Epoxy	Spectrashield	12.6	6.23 North 8.11 South	6.23	Joint Wrap	Con Seal	455667.5	2193930.6	30.366916	-81.778950	

Sample Water Meter Box Table:

Meter Box Number	Proposed Meter Size	Meter Box Subtype	Facility Owner	Meter Box Orientation	Meter Box Manufacturer/Supplier	Meter Box Material	State Plane X Coord (feet)	State Plane Y Coord (feet)	Latitude (Decimal Degrees)	Longitude (Decimal Degrees)
WM1	1 ½"	Minor Meter	JEA	Underground	Glassmasters	Polymer	455667.55	2193930.60	30.366916	-81.778950
WM2	1 ½"	Major Meter	JEA	Underground	Glassmasters	Concrete	455667.55	2193930.60	30.366916	-81.778950
WM3	Existing	Minor Meter	JEA	Underground	Glassmasters	Concrete	455667.55	2193930.60	30.366916	-81.778950

Sample Wastewater Service Point Table:

Wastewater Service Point 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	30.366916	-81.778950
WWSP2	Customer Point	12.2	8.6	3.6	455667.55	2193930.60	30.366916	-81.778950
WWSP3	Customer Point	12.6	10.4	2.5	455667.55	2193930.60	30.366916	-81.778950

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)
WL1	Locate Wire Box	455667.55	2193930.60	30.366916	-81.778950
WL2	Locate Wire Box	455667.55	2193930.60	30.366916	-81.778950
WL3	Locate Wire Box	455667.55	2193930.60	30.366916	-81.778950

Sample Reclaimed Meter Box Table:

Meter Type & Lot Number	Proposed Meter Size	Meter Box Subtype	Facility Owner	Meter Box Orientation	Meter Box Manufacturer/Supplier	Meter Box Material	State Plane X Coord (feet)	State Plane Y Coord (feet)	Latitude (Decimal Degrees)	Longitude (Decimal Degrees)
RM1	1 ½"	Minor Meter	JEA	Underground	Glassmasters	Polymer	455667.55	2193930.60	30.3669169	-81.7789500
RM2	1 ½"	Minor Meter	JEA	Underground	Glassmasters	Polymer	455667.55	2193930.60	30.3669169	-81.7789500
RM3	1 ½"	Minor Meter	JEA	Underground	Glassmasters	Polymer	455667.55	2193930.60	30.3669169	-81.7789500

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

		_____	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 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

		_____	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 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 – Electronic
_____ Wastewater As-Builts & Data Tables – Electronic
_____ Wastewater Pump Station Attribute Tables Electronic
_____ Reclaimed Water As-Builts & Data Tables – Electronic
_____ Chilled Water As-Builts & Data Tables – 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 as one continuous PDF

____ 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

____ PDF sheets are 24" x 36" in size

____ All PDF sheets combined into one document

____ All Utility Services (Water/Sewer/Reclaimed/Chilled) provided on first and every submittal

____ CAD and Excel files provided on first and every submittal

____ 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 and Graphic Scale on each page

____ Cover Page required which is a separate page from Utility Pages

____ Call outs provided for any main that is Removed, Abandoned/Grout Filled, or Out of Service. Call out beginning and end points

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

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

____ Date of utility installation completion on Cover 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

____ Call outs provided showing points of connection to existing JEA infrastructure.

____ Water pressure and/or force main pressure sensors are identified.

____ Pump station as built include all detail sheets.

As Built Cover Page

_____ Title with “As-Built” and Project Name underneath. If known, provide address

_____ Availability Number and/or the JEA Capital Project Number

_____ Vicinity Map (refer to Standards Manual for Vicinity Map requirements)

_____ Date of utility installation completion

_____ Legend

_____ Surveyor Notes (includes vertical and horizontal datum)

_____ General Notes (specific utility notes provided on utility sheets)

_____ Certifications filled out, signed, and sealed on every sheet, including cover sheet

_____ Title Block

_____ Surveyor logo and address

Cover Page should not include:

_____ As-Built utility plans

_____ Data Tables

POTABLE WATER SYSTEMS

WATER MAINS

Elevations on the main and finished grade shown at:

- Points of connection to the existing system and called out on the plan view and shown in the points along pipe table
- In the event of potable water temporarily serving irrigation demand, call out the point of connection between potable and reclaimed
- Points of crossing over or under wastewater mains, reclaimed mains, chilled water mains or storm drains called out on the plan view and shown in the pipe crossing table
- At maximum of 100 ft. intervals called out on the plan view and shown in the points along pipe table
- Where less than 30 inches or greater than 48 inches of cover is provided called out on the plan view and shown in the points along pipe table
- Main stub outs called out on the plan view and shown in the points along pipe table

Beginning and ending points of pipe exposed aboveground are shown in the points along pipe table, with Pipe Orientation noted as Aboveground

Each water main section is shown with pipe size, pipe material and pipe pressure class called out with a leader line pointing to the applicable main. A new call out should be placed when the pipe size, pipe material, and/or pressure class changes.

Provide a note on each water sheet for water service laterals stating the size, pressure class, and material

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

HDD (Horizontal directional drill) bore log included showing:

- Bore in plan view showing length and beginning/end points called out with coordinates
- Bore profile view provided on separate sheet
- Bore log on 24” x 36” sheets
- Certified by HDD contractor
- Horizontal and vertical location data at 25 ft. intervals (max)

Points along Pipe table with data at points of connection and maximum 100 ft intervals:

- Pipe Location Number (WPOC#, WWPOL#, etc)
- Pipe Location (Point of Connection, Top of Pipe, Top of Casing)
- Pipe Subtype
- Facility Owner
- Pipe Size
- Pipe Orientation
- Pipe Class
- Pipe Manufacturer
- Pipe Material
- Pipe Lining Manufacturer

- Pipe Lining Material
- Finished Grade Elevation (feet)
- Pipe Top Elevation (feet)
- Pipe Cover (feet)
- X Coord (State Plane Easting feet)
- Y Coord (State Plane Northing feet)
- Latitude (Decimal Degrees)
- Longitude (Decimal Degrees)

Pipe Crossing table with data at each crossing:

- Crossing Number
- Upper Pipe Type
- Upper Pipe Size
- Finished Grade Elevation (feet)
- Upper Pipe Top Elevation (feet)
- Cover to Top of Upper Pipe (feet)
- Upper Pipe Bottom Elevation (feet)
- Lower Pipe Type
- Lower Pipe Size (inches)
- Lower Pipe Top Elevation (feet)
- Cover to Top of Lower Pipe (feet)
- Separation Between Pipes (feet)
- X Coord (State Plane Easting feet)
- Y Coord (State Plane Northing feet)
- Latitude (Decimal Degrees)
- Longitude (Decimal Degrees)

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. All Fittings should be clearly shown on the main.

Table included with data for each fitting:

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

WATER VALVES

Each valve shows a call out designating valve number, valve type, and valve size with leader pointing to the installed valve. All Valves should be clearly shown on the main.

Table included with data for each valve:

- Valve Number (WV#)
- Valve Subtype = Valve, ARV, Backflow, Hydrant
- Valve Type
- Facility Owner (JEA or PRIVATE)
- Valve Size
- Valve Orientation
- Valve Open Direction (left/right)
- Valve number of turns required to open the valve
- Valve Nut Elevation (feet)
- Finished Grade Elevation (feet)
- Depth to Nut (feet)
- Valve Manufacturer
- X Coord (State Plane Easting feet)
- Y Coord (State Plane Northing feet)
- Latitude (in Decimal Degrees)
- Longitude (in Decimal Degrees)

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#)
- Facility Owner (JEA or PRIVATE)
- Hydrant Manufacture Date (year)
- Hydrant Manufacturer
- X Coord (State Plane Easting feet)
- Y Coord (State Plane Northing feet)
- Latitude (in Decimal Degrees)
- Longitude (in Decimal Degrees)
- RFID/Barcode Number

WATER METERS AND METER BOXES

Each meter box shall be listed in the data table with meter number matching the Lot # or Address #. If no Lot # or Address # exists, assign a water meter number not included in the Lot # series. Show this meter number at the meter on the plan view and in the data table.

Irrigation Meters shall be numbered with Meter Number, shown and called out on the plan view and included in the water meter 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 (WM#)
- Proposed Meter Size
- Meter Subtype = Minor Meter (<2”), Major Meter, Irrigation Meter
- Facility Owner (JEA or PRIVATE)
- Meter Box Orientation
- Meter Box Manufacturer
- Meter Box Material
- X Coord (State Plane Easting feet)
- Y Coord (State Plane Northing feet)
- Latitude (in Decimal Degrees)
- Longitude (in Decimal Degrees)

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 (WL#)
- Locate Box Subtype (Marker Ball, Locate Wire Box)
- X Coord (State Plane Easting feet)
- Y Coord (State Plane Northing feet)
- Latitude (in Decimal Degrees)
- Longitude (in Decimal Degrees)

WASTEWATER SYSTEMS

GRAVITY MAINS

_____ Elevations on the main and finished grade shown at:

- Points of connection to the existing system and called out on the plan view and shown in the points along pipe table
- Points of crossing over or under water mains, reclaimed mains, chilled water mains, wastewater mains or storm drains and shown in the pipe crossing table
- Lateral (service) end points
- Main stub outs

_____ Beginning and ending points of pipe exposed aboveground are shown in the points along pipe table, with Pipe Orientation noted as Aboveground.

_____ 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.

_____ Call out High Line (HL) and Low Line (LL) on the plan and profile view

_____ Note if Sewer Service ties into Low Line in profile view

_____ Provide a note on each sewer sheet for sewer laterals stating the size, pressure class, and material

_____ 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 (GM#)
- 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 (feet/feet)

GRAVITY FITTINGS

Each fitting shows a call out designating fitting number, fitting type (cleanout, wye, plug, etc) and size with leader pointing to the installed fitting. All fittings shall be clearly shown on the main.

Table included with data for each fitting:

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

MANHOLES

Manholes labeled with manhole number and called out with manhole type, rim elevation, and invert elevations with a leader pointing to the applicable manhole.

Table with the following data for each manhole:

- Manhole Number (MH#)
- 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
- Lowest Invert Elevation (feet)
- Exterior Joint Tape Type
- Exterior Joint Tape Manufacturer
- X Coord (State Plane Easting feet)
- Y Coord (State Plane Northing feet)
- Latitude (in Decimal Degrees)
- Longitude (in Decimal Degrees)
- RFID/Barcode Number (future)

WASTEWATER SERVICE POINTS

Each service point (sewer lateral end point) shall be listed in the data table with service point number matching the Lot # or Address #. If no Lot # or Address # exists, assign a service point number not included in the Lot # series. Show this service point number at the service point on the plan view and in the data table.

Table included with data for each wastewater service point:

- Wastewater Service Point Number (WWSP# or WWM#)
- Wastewater Service Point Subtype = Customer point, Sewer Flow Meter
- Finished Grade Elevation (feet)
- Top of Pipe Elevation (feet)
- Depth of Cover (feet)
- X Coord (State Plane Easting feet)
- Y Coord (State Plane Northing feet)
- Latitude (in Decimal Degrees)
- Longitude (in Decimal Degrees)

WASTEWATER PRESSURE MAINS

_____ Elevations on the main and finished grade shown at:

- Points of connection to the existing system and called out on the plan view and shown in the points along pipe table
- Points of crossing over or under water mains, reclaimed mains, chilled water mains, wastewater mains or storm drains called out on the plan view and shown in the pipe crossing table
- At maximum of 100 ft. intervals called out on the plan view and shown in the points along pipe table
- Where less than 30 inches or greater than 48 inches of cover is provided called out on the plan view and shown in the points along pipe table
- Main stub-outs

_____ Beginning and ending points of pipe exposed aboveground are shown in the points along pipe table, with Pipe Orientation noted as Aboveground.

_____ Each main section is shown with pipe size, pipe material and pipe pressure class called out with a leader line pointing to the applicable main. A new call out should be placed when the pipe size changes.

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

_____ HDD bore log included showing:

- Bore in plan view showing length and beginning/end points called out with coordinates
- Bore profile view provided on separate sheet
- 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

_____ Points along Pipe table with data at points of connection and maximum 100 ft intervals:

- Pipe Location Number
- Pipe Location (Point of Connection, Top of Pipe, Top of Casing)
- Pipe Subtype
- Facility Owner
- Pipe Size (inches)
- Pipe Orientation
- Pipe Class
- Pipe Manufacturer
- Pipe Material
- Pipe Lining Manufacturer
- Pipe Lining Material
- Finished Grade Elevation (feet)
- Pipe Top Elevation (feet)
- Pipe Cover (feet)
- X Coord (State Plane Easting feet)

- Y Coord (State Plane Northing feet)
- Latitude (Decimal Degrees)
- Longitude (Decimal Degrees)

_____ Pipe Crossing table with data at each crossing:

- Crossing Number
- Upper Pipe Type
- Upper Pipe Size (inches)
- Finished Grade Elevation (feet)
- Upper Pipe Top Elevation (feet)
- Cover to Top of Upper Pipe (feet)
- Upper Pipe Bottom Elevation (feet)
- Lower Pipe Type
- Lower Pipe Size (inches)
- Lower Pipe Top Elevation (feet)
- Cover to Top of Lower Pipe (feet)
- Separation Between Pipes (feet)
- X Coord (State Plane Easting feet)
- Y Coord (State Plane Northing feet)
- Latitude (Decimal Degrees)
- Longitude (Decimal Degrees)

FORCE MAIN FITTINGS

Each fitting shows a call out designating fitting number, fitting type (45, tee, etc.) and size with leader pointir to the installed fitting. All Fittings should be clearly shown on the main.

Table included with data for each fitting:

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

WASTEWATER VALVES

Each valve shows a call out designating valve number, valve type, and valve size with leader pointing to the installed valve. All Valves should be clearly shown on the main.

Air release valves in manholes called out and shown on plan view and included in valve table.

Table included with data for each valve:

- Valve Number (WWV#)
- Valve Subtype = Valve, ARV
  (See data table file for subtypes)
- Valve Type
- Facility Owner (JEA or PRIVATE)
- Valve Size
- Valve Orientation
- Valve Open Direction (left/right)
- Valve number of turns required to open the valve
- Valve Nut Elevation (feet)
- Finished Grade Elevation (feet)
- Depth to Nut (feet)
- Valve Manufacturer
- X Coord (State Plane Easting feet)
- Y Coord (State Plane Northing feet)
- Latitude (in Decimal Degrees)
- Longitude (in Decimal Degrees)

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 (WWL#)
- Locate Box Subtype (Marker Ball, Locate Wire Box)
- X Coord (State Plane Easting feet)
- Y Coord (State Plane Northing feet)
- Latitude (in Decimal Degrees)
- Longitude (in Decimal Degrees)

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

_____ All above and below ground piping is shown

_____ 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 shall be shown, with size indicated, 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.

_____ Water pressure and/or force main pressure sensors are identified.

RECLAIMED WATER SYSTEMS

RECLAIMED WATER MAINS

_____ Elevations on the main and finished grade shown at:

- Points of connection to the existing system and called out on the plan view and shown in the points along pipe table
- In the event of potable water temporarily serving irrigation demand, call out the point of connection between potable and reclaimed
- Points of crossing over or under water mains, reclaimed mains, chilled water mains, wastewater mains or storm drains called out on the plan view and shown in the pipe crossing table
- At maximum of 100 ft. intervals called out on the plan view and shown in the points along pipe table
- Where less than 30 inches or greater than 48 inches of cover is provided called out on the plan view and shown in the points along pipe table
- Main stub-outs

Beginning and ending points of pipe exposed aboveground are shown in the points along pipe table, with Pipe Orientation noted as Aboveground.

_____ Each reclaimed water main section is shown with pipe size, pipe material and pipe pressure class called out with a leader line pointing to the applicable. A new call out should be placed when the pipe size changes.

_____ Provide a note on each water sheet for water service laterals stating the size, pressure class, and material.

_____ 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 view showing length and beginning/end points called out with coordinates
- Bore profile view provided on separate sheet
- Bore log on 24” x 36” sheets
- Certified by HDD contractor
- Horizontal and vertical location data at 25 ft. intervals (max)

_____ Points along Pipe table with data at points of connection and maximum 100 ft intervals:

- Pipe Location Number
- Pipe Location (Point of Connection, Top of Pipe, Top of Casing)
- Pipe Subtype
- Facility Owner
- Pipe Size (inches)
- Pipe Orientation
- Pipe Class
- Pipe Manufacturer
- Pipe Material
- Pipe Lining Manufacturer

- Pipe Lining Material
- Finished Grade Elevation (feet)
- Pipe Top Elevation (feet)
- Pipe Cover (feet)
- X Coord (State Plane Easting feet)
- Y Coord (State Plane Northing feet)
- Latitude (Decimal Degrees)
- Longitude (Decimal Degrees)

Pipe Crossing table with data at each crossing:

- Crossing Number
- Upper Pipe Type
- Upper Pipe Size (inches)
- Finished Grade Elevation (feet)
- Upper Pipe Top Elevation (feet)
- Cover to Top of Pipe (feet)Upper Pipe Bottom Elevation (feet)
- Lower Pipe Type
- Lower Pipe Size (inches)
- Lower Pipe Top Elevation (feet)
- Cover to Top of Lower Pipe (feet)
- Separation Between Pipes (feet)
- X Coord (State Plane Easting feet)
- Y Coord (State Plane Northing feet)
- Latitude (Decimal Degrees)
- Longitude (Decimal Degrees)

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. All Fittings should be clearly shown on the main.

Table included with data for each fitting:

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

RECLAIMED WATER VALVES

Each valve shows a call out designating valve number, valve type, and valve size with leader pointing to the installed valve. All Valves should be clearly shown on the main.

Table included with data for each valve:

- Valve Number (RV#)
- Valve Subtype = Valve, ARV, Backflow, Flushing Hydrant
  (See data table file for subtypes)
- Valve Type
- Facility Owner (JEA or PRIVATE)
- Valve Size
- Valve Orientation
- Valve Open Direction (left/right)
- Valve number of turns required to open the valve
- Valve Nut Elevation (feet)
- Finished Grade Elevation (feet)
- Depth to Nut (feet)
- Valve Manufacturer
- X Coord (State Plane Easting feet)
- Y Coord (State Plane Northing feet)
- Latitude (in Decimal Degrees)
- Longitude (in Decimal Degrees)

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 (RH#)
- Facility Owner (JEA or PRIVATE)
- Hydrant Manufacture Date (year)
- Hydrant Manufacturer
- X Coord (State Plane Easting feet)
- Y Coord (State Plane Northing feet)
- Latitude (in Decimal Degrees)
- Longitude (in Decimal Degrees)
- RFID/Barcode Number

RECLAIMED WATER METER BOXES

Each meter box shall be listed in the data table with meter number matching the Lot # or Address #. If no Lot # or Address # exists, assign a reclaimed water meter number not included in the Lot # series. Show this meter number at the meter on the plan view 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 (RM#)
- Proposed Meter Size
- Meter Subtype = Minor Meter (<2"), Major Meter
- Facility Owner (JEA or PRIVATE)
- Meter Box Orientation
- Meter Box Manufacturer
- Meter Box Material
- X Coord (State Plane Easting feet)
- Y Coord (State Plane Northing feet)
- Latitude (in Decimal Degrees)
- Longitude (in Decimal Degrees)

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 (RL#)
- Locate Box Subtype (Marker Ball, Locate Wire Box)
- X Coord (State Plane Easting feet)
- Y Coord (State Plane Northing feet)
- Latitude (in Decimal Degrees)
- Longitude (in Decimal Degrees)

CHILLED WATER SYSTEMS

CHILLED WATER MAINS

____ Elevations on the main and finished grade shown at:

- Points of connection to the existing system and called out on the plan view and shown in the points along pipe table
- Points of crossing over or under water mains, reclaimed mains, chilled water mains, wastewater mains or storm drains called out on the plan view and shown in the pipe crossing table
- At maximum of 100 ft. intervals called out on the plan view and shown in the points along pipe table
- Where less than 30 inches or greater than 48 inches of cover is provided called out on the plan view and shown in the points along pipe table

Beginning and ending points of pipe exposed aboveground are shown in the points along pipe table, with Pipe Orientation noted as Aboveground.

____ Each chilled water main section is shown with pipe size, pipe material and pipe pressure class called out with a leader line pointing to the applicable main. A new call out should be placed when the pipe size changes.

____ Each pipe labeled as to supply water or return water

____ Provide a note on each water sheet for water service laterals stating the size, pressure class, and material

____ 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 view showing length and beginning/end points called out with coordinates
- Bore profile view provided on separate sheet
- Bore log on 24” x 36” sheets
- Certified by HDD contractor
- Horizontal and vertical location data at 25 ft. intervals (max)

____ Points along Pipe table with data at points of connection and maximum 100 ft intervals:

- Pipe Location Number
- Pipe Location (Point of Connection, Top of Pipe, Top of Casing)
- Facility Owner
- Pipe Size (inches)
- Pipe Orientation
- Pipe Class
- Pipe Manufacturer
- Pipe Material
- Pipe Lining Manufacturer
- Pipe Lining Material
- Finished Grade Elevation (feet)
- Pipe Top Elevation (feet)

- Pipe Cover (feet)
- X Coord (State Plane Easting feet)
- Y Coord (State Plane Northing feet)
- Latitude (Decimal Degrees)
- Longitude (Decimal Degrees)

Pipe Crossing table with data at each crossing:

- Crossing Number
- Upper Pipe Type
- Upper Pipe Size (inches)
- Finished Grade Elevation (feet)
- Upper Pipe Top Elevation (feet)
- Cover to Top of Upper Pipe (feet)
- Upper Pipe Bottom Elevation (feet)
- Lower Pipe Type
- Lower Pipe Size (inches)
- Lower Pipe Top Elevation (feet)
- Cover to Top of Lower Pipe (feet)
- Separation Between Pipes (feet)
- X Coord (State Plane Easting feet)
- Y Coord (State Plane Northing feet)
- Latitude (Decimal Degrees)
- Longitude (Decimal Degrees)

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. All Fitting should be clearly shown on the main.

Table included with data for each fitting:

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

CHILLED WATER VALVES

Each valve shows a call out designating valve number, valve type, and valve size with leader pointing to the installed valve. All Valves should be clearly shown on the main.

Table included with data for each valve:

- Valve Number (CV#)
- Valve Type
- Facility Owner (JEA or PRIVATE)
- Valve Size
- Valve Orientation
- Valve Open Direction (left/right)
- Valve number of turns required to open the valve
- Valve Nut Elevation (feet)
- Finished Grade Elevation (feet)
- Depth to Nut (feet)
- Valve Manufacturer
- X Coord (State Plane Easting feet)
- Y Coord (State Plane Northing feet)
- Latitude (in Decimal Degrees)
- Longitude (in Decimal Degrees)

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 (CL#)
- Locate Box Subtype (Marker Ball, Locate Wire Box)
- X Coord (State Plane Easting feet)
- Y Coord (State Plane Northing feet)
- Latitude (in Decimal Degrees)
- Longitude (in Decimal Degrees)

CHILLED WATER METER ROOMS

Each meter room shall be listed in the data table with meter number matching the Lot # or Address #. If no Lot # or Address # exists, assign a chilled water meter number not included in the Lot # series. Show this meter number at the meter on the plan view and in the data table.

The size meter to be installed for each meter

Table included with data for each meter room:

- Meter Room Number (CM#)
- Proposed Meter Size
- Facility Owner (JEA or PRIVATE)
- X Coord (State Plane Easting feet)
- Y Coord (State Plane Northing feet)
- Latitude (in Decimal Degrees)
- Longitude (in Decimal Degrees)

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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