SECTION 01725
DONATION PROJECT AS-BUILTS

PART 1 - GENERAL

1.01 SCOPE

A. This section shall serve to set out guidelines for as-built drawings submitted to Miami-Dade Water and Sewer Department (hereafter called "the Department") for donation projects.

B. Objectives:
   1. As-Built Drawings as used herein shall mean a drawing that accurately records constructed improvements and any field changes.
   2. As built dimensions and elevations as recorded by the Contractor's Florida Licensed Professional Surveyor and Mapper (PSM).
   3. Field Book. Survey Field notes taken by the Florida Licensed Professional Surveyor and Mapper's survey crew.
   4. Submit final as-builts at the time of system testing. Provide AutoCAD files and PDF’s to be uploaded into the Department’s GIS system. Provide signed and sealed copies of field book information to the Department.

C. The Contractor's Florida Licensed Professional Surveyor and Mapper (PSM) shall attend the Preconstruction Meeting prior to the start of the project when requested by the Department.

1.02 REQUIRED MEASUREMENTS

A. Set-up and Verification: The Contractor’s Florida Licensed Professional Surveyor and Mapper is required to recover the design baseline and verify the elevations and coordinates on a regular basis as needed.

B. The Contractor is required to have a level instrument setup next to the construction site in order to control the vertical alignment of the pipe installation prior to trench backfilling. The level shall be setup daily for use by the surveyor, Contractor's foreman and Department Engineer/Inspector.

C. The Contractor is required to have a survey crew record the field information as necessary when there is underground pipe installation. The survey crew shall be on-site as needed to record and verify the information before it is covered. Any underground construction work that does not have the information recorded by a survey crew will be stopped by the Department Engineer/Inspector. The Engineer/Inspector has the authority to order re-excavation of work that was covered without accurate survey measurements.

D. Field Book Information: The Florida Licensed Professional Surveyor and Mapper is required to have his crews make periodic visits to the project site during underground pipe installation work to perform field measurements of the Contractor’s installations. This information shall be recorded in field books. Copies of the field notes are required to be provided to the Construction Manager on a monthly basis. The surveyor’s field notes of the surveyor shall be submitted to the Department along with final as-builts (signed and sealed) as a condition of conveyance.

1.03 CRITERIA FOR AS-BUILTS
A. As-builts shall be submitted for all projects where new water or sewer facilities will be conveyed or final acceptance to the Department. These facilities shall have as-built drawings showing all applicable data listed in Sub-section 1.05 and 1.06, herein, as located by a surveyor and prepared in accordance with these guidelines as part of the construction and inspection process.

B. Horizontal: The Surveyor shall show on the as-built drawings the Florida State Plane Coordinate (current readjustment - NAD 83, FLA East Zone 901) with at least two physically located horizontal control points within the project limits.

C. VERTICAL DATUM

1. Nationwide, surveys and as-builts are in the process of conversion to NAVD 88 from the NGVD 1929. The Department will accept NAVD 88 datum with a conversion factor on each page.

2. The Florida Department of Transportation is using the NAVD 88 datum. Projects within FDOT roadway limits shall either use NAVD 88 datum or provide a conversion factor on each page if the NGVD 1929 datum is used.

3. For projects using City of Miami datum provide a conversion factor on each page to the NAVD 88 datum.

1.04 QUALITY ASSURANCE

A. CONTRACTOR'S REQUIREMENTS

1. As-built preparation and submittal shall ultimately be the responsibility of the Contractor. The as-builts shall be completed and submitted to the Department at the time of system testing. Testing will not be considered complete until as-built record documents are submitted and approved by the Department.

2. As-builts shall be checked by the Contractor for errors and omissions prior to submittal to the Department. The Contractor's shall certify in writing that the as-builts are correct and accurately depict what was constructed in the field. This shall be part of the submittal package.

3. Donation Projects: A Bill of Materials (on Department form) shall also be certified as correct by signature and presented at the time of as-built submission. Quantities shown on the Bill of Materials shall match installed and as-built quantities, not quantities proposed, bid or bought nor scaled distances or quantities.

B. SURVEYOR REQUIREMENT

Facilities being shown on as-builts shall have been located under the direction of a Florida Licensed Professional Surveyor and Mapper (PSM).

C. COMPLIANCE WITH TECHNICAL STANDARDS
1. As-builts prepared under these guidelines are for the specific use of the Department and are required to meet the standard of practice established in Chapter 5J-17.050 to 5J-17.052 of the Florida Administrative Code, pursuant to Section 427.027, Florida Statutes.

2. As-builts shall meet the requirements established in these specifications.

D. CERTIFICATION

1. As-builts shall include a signed, sealed and dated certification statement by the responsible Florida Licensed Professional Surveyor and Mapper (PSM) that all measurements were recorded under his direction and are accurate.

2. Final As-builts that contain electrical, mechanical or structural work (Pump Stations, Sewage Flow Meters) shall also be signed and sealed by the Engineer of Record to indicate that the work was constructed as designed.

3. Certifier shall be fully responsible for the accuracy of the as-builts. As-builts may not contain any statement that the information was obtained from another party other than a licensed land surveyor under his direction. (For example a statement such as "As-built information provided by Contractor" shall not be permitted).

1.05 AS-BUILT REVIEW PROCESS

A. DELIVERY TO DEPARTMENT

1. The complete submittal package as defined below shall be delivered using the E-Review system.

2. The E-Review system will send a confirmation email to the sender. The system will also notify the recipients of the E-Review submittal on the Department’s side.

3. The Contractor shall submit an email to the As-Built Reviewer indicating that the complete as-built package has been submitted for review. List the project name, process identification numbers and all other relevant information.

B. SUBMITTAL PACKAGE:

The following shall be submitted as one package in order to be accepted for initial review by the Inspections Unit.

1. Initial submittal (prior to performing field testing) shall include the following: 1 set of signed and sealed as-built (DWFX file), signed and sealed field book information, DWFX file of the as-built and the Miami-Dade WASD Minimum Requirements As-built Plan Submittal Checklist Form submitted to E-Review.

2. Final submittal shall consist of corrected As-Built Documents in digital format (AutoCAD and DWFX files) and the following sets of signed and sealed as-builts sets:

   Three (3) sets - for Water Main Projects,
Four (4) sets - for Gravity Sewer Main Projects, and
Five (5) sets - for Force Main/Pump Station Projects.
Signed and Sealed Copy of Field Book Information.

As-builts signed and sealed by the Florida Licensed Professional Surveyor and Mapper
and/or Engineer of Record must comply with format requirements.

3. If the project contains water or sewer service to newly or recently platted lots, the following
are also required:

   a) At least one COMPLETE set of copies of the RECORDED plat(s) for the involved
      lots shall be submitted along with the as-builts. Non-recorded plats or incomplete
      sets (common example: Sheet 2/2 submitted without sheet ½) will not be accepted.
      Final as-built acceptance shall require TWO sets.

   b) In lieu of recorded plats one copy of a tentative plat signed by a representative of
      the Miami-Dade County Public Works Department, Plats Division may be
      acceptable for as-built purposes. The Plats Division representative should attest
      that the lot and block numbers, street names, easements and other pertinent data
      shown are as will be recorded in the plat's final form . In this case, the submitter is
      responsible to provide a copy of the recorded plat to the Department's New
      Business office before any water meters will be set on the project.

4. For Donation Projects, a Bill of Materials, Bill of Sale Sketch completed and signed by the
Contractor and easement legal description and sketch (signed by the owner if part of the
project) shall be provided at initial submittal.

C. DEPARTMENT PROCESSING

1. The Department will require Ten (10) business days to perform the as-built review.

2. As-builts will be initially checked by the responsible Field Inspector to verify that they are
   an accurate representation of the work as installed and that the job as shown is complete
   and in accordance with the permitted plans.

3. Following the Field Inspector’s review, as-builts will be reviewed in depth by the As-Built
   Reviewer to ensure compliance with these standards. The Reviewer will also check the
   complete package which includes the Bill of Materials.

D. CAUSE FOR NON-REVIEW

1. If review by the As-built Reviewers reveals errors or omissions of a gross nature the
   as-builts shall be deemed "non-reviewable". As-builts containing errors or omissions
   of a gross nature shall include those with omission of major sections of the installation,
   water and sewer as-builts on same sheet, those lacking large amounts of information and
   other errors or omissions that are considered gross in the opinion of the As-built
   Reviewer.
2. In cases when an as-built is considered "non-reviewable", it shall be marked "Not Reviewed Further", the reviewer shall note comments regarding obvious problem(s) and shall be returned to submitter. Such as-buils will not be considered as having been reviewed for the purposes of Sub-section 1.05-E, below.

E. PUNCH LIST

1. Punch List items may be generated from the Department initial review. Successive reviews are solely for the purpose of ensuring that original punch list items are completely and correctly done to obtain a final As-built acceptable to the Department.

2. Successive punch list items may only be added to correct a problem resulting from submitter's efforts to comply with the original punch list. No new original punch list item(s) may be added. Submitter shall be required to make these successive changes.

3. In the case of an oversight on the part of the As-built Reviewer, punch list items may be added to the list or requested of the submitter after the valid time for such items. The Department requires that all corrections be made as a condition of accepting the final as-buils.

F. ACQUISITION AND RESUBMITTAL

1. After notification from the Department, DWFX file with markups along with the as-built punch list can be obtained from the FTP folder.

2. After making the corrections requested on the as-built and punch list, return the complete package to FTP folder.

3. The same 10 business day rule shall apply to resubmittals.

4. The DWFX file shall be submitted with previous comments. Failure to do so may delay the review process.

H. DISPUTES OR INTERPRETATION

1. Resolution of disputes and interpretation of these requirements is the responsibility of the As-Built Reviewer. Submitting parties are urged to work with him to resolve any problems of this nature.

2. Where necessary, the submitting party may request a hearing with the PSM in matters of dispute or interpretation. The PSM's decisions shall be considered final as regards the Department.

1.06 AS-BUILTS SUBMITTAL REQUIREMENTS

A. FORMAT AND GENERAL REQUIREMENTS

1. Size shall be 24" X 36", except as noted below.
a) If the original design was approved by the Department on smaller-sized paper then the as-builds may be submitted on the same-sized smaller paper or on larger-sized paper.

b) In no case will as-builds larger than 24" X 36" be accepted by the Department.

2. Except as noted below, final as-build submittal shall consist of:

a) Final submittal shall consist of corrected As-Built Documents in digital format (AutoCAD and DWFX files) and the following sets of signed and sealed as-builds sets:

   Three (3) sets - for Water Main Projects,
   Four (4) sets - for Gravity Sewer Main Projects, and
   Five (5) sets - for Force Main\Pump Station Projects.
   Signed and Sealed Copy of Field Book Information.

3. Preferred scale is l"=40' horizontally and l"=4' vertically. Other scales may be permitted but must be approved by the Department prior to preparation of the drawings.

4. Provide separate as-built drawings for water and sewer conveyances. Where water and sewer are shown on the same print dash the water on the sewer as-builts and show only sewer as-built information. The same applies for the water as-builds.

5. Any deviations from the design plans must be approved by the Department.

B. QUALITY OF AS-BUILTS

To ensure that as-builds may serve their intended purposes now and in the future, they should be prepared with consideration for quality. The As-built Reviewer will consider the following elements to ensure the quality of as-builds.

1. **Accuracy:** The Contractor is required to have a survey crew record the field information on as necessary when there is underground pipe installation. The Florida Licensed Professional Surveyor and Mapper shall be responsible for providing measurements accurate to the standard of practice established in Chapter 5J-17.050 to 5J-17.052 of the Florida Administrative Code, pursuant to Section 427.027, Florida Statutes. The approved final record as-built shall be used as part of the WASD’s GIS and Record System.

2. **Field Changes:** The Contractor’s PSM shall maintain exact and extensive records of any deviations from the design plan set.

3. **Appearance:** As-builds shall be prepared in a professional manner consistent with common engineering standards for layout, lettering and line-work.

4. **"Understandability":** As-built information shall be portrayed in a manner that is readily understandable by someone not familiar with the specific job.

5. **Clarity:** Preparer shall endeavor to present as-built information clearly without "cluttering"
the drawing.

1.07 AS-BUILT CONTENT REQUIREMENTS

A. GENERAL

The following shall be made a part of any as-built submittal for water or sewer, where applicable:

1. The project name, project identification number and the words "As-Built Water" or "As-Built Sewer", all prominently displayed. Surveyor's name, company, address and phone number shall also be displayed.

2. Scale, north arrow and any symbol legend needed.

3. All involved streets shown with centerlines, right-of-way lines, widths and names, with matching plat, if applicable, subdivision name, phaseline and number. (Phasing to be nearest valve and manhole in limits of phase area). Show station at all intersecting streets.

4. All involved lots and blocks shown and correctly designated (to match plat).

5. All control lines identified (i.e. centerline, section line, etc.). Identify all streets by name or number and show stationing at all intersecting streets.

6. Baseline shall be tied to centerlines, boundary lines, section corners, or to monument lines or to right-of-way lines. Baselines must show bearings or deflection angles, or delta, radius, chord and arc length for curves.

7. Pipeline shall be tied to a baseline that easily identified on the existing or proposed right-of-way. Baseline shall not be on top of the main except for gravity sewers installed on centerlines.

8. Show all horizontal curve data, including point of curvature (PC) and point of tangency (PT) stations or radial bearing.

9. Stationing shall proceed from south to north and/or from west to east. Stationing shall be the same as shown on construction drawings and must be tied to Section corners, centerline intersections and all other pertinent control points within the Project. All such pertinent points shall have their stationing shown and where there is dual stationing for a point, both stations shall be called out. Stations shall begin with 10+00.

10. On vertical control refer to datum used (such as, NGVD 1929, City of Miami, NAVD 88), and identify the location, elevation and source supplying the bench mark used.

11. Easements:

   a) Easements, if any, shall be clearly shown with size and tied to centerline. The easements shall be separate for water, sewer, force main and pump stations.
b) Existing Official Record Book (ORB) must be shown.

c) Easements are required for any facilities not in the public right-of-way. An easement may also be required for a main in the public right of way if there is insufficient side clearance to the right-of-way line to permit maintenance of the pipeline (usually 6' for water and force mains and 7.5' for force mains and gravity sewer mains). For pipelines larger than 16-inches the easement size shall be determined by the Department.

d) Easement lines shall be tied to the centerline of the main.

12. All "proposed" information shall be removed from as-builts, leaving only "as-built" information reflected in drawing.

13. Site location sketch shall be provided showing the project site and surrounding area with all streets clearly named, its own north arrow and scale (1"=300', preferably). The section, township and range shall also be provided, therein.


15. When the main crosses a utility or structure, the two points providing the clearance shall be identified, measured and recorded. This shall apply to all utilities (water, sewer, sewer laterals, water services, gas, electric, storm, telecommunication, duct banks, etc.).

16. All mains shall be stationed and all facilities labeled. As-builts shall show stations for all services. As-built lengths and distances for service runs shall also be given.

   a. Stations shall run along the baseline.

   b. For water mains, force mains and gravity sewers use one continuous stationing system. Stationing should begin at 10+00.

   c. Where different stationing systems cross, show the equation station.

   d. Label and station all valves, fittings, services, outlets, manholes, deflection points and other components in the line. The labels and stations shall coincide, plan and profile.

17. Tie-in Points:

   a. All tie in points, water or sewer shall be tied to the baseline.

   b. In instances where this is impractical such as for service installations, the tie in may be located reference to a known Department facility such as a valve or manhole. This facility must be fully identified with atlas page, Department as built number and page and its designation and station as given therein. Approval for this method of location shall be secured with the As Built Reviewer.

18. Clearly show and label what is new and what is existing at the tie-in points with the WASD as-built number identified on the existing main.
19. The ends of all services and laterals shall be fully located by reference to the main and/or the nearest property line(s).

20. Show all outlets, stub-outs, sewer lateral, water service and any other relevant information. Identify the size, material, length, direction and elevation (top of pipe for water and force main, invert for gravity sewer).

21. On all pipe fittings of 36-inch diameter or over, including tees, bends, crosses, wyes and bevels, station and elevations shall be taken at the ends and center points to reflect the true elevation and orientation of the fitting.

22. Elevations of natural ground or pavement over pipelines shall be shown at each position where the pipe elevation is shown at least every 100ft.

23. Manhole rim and valve box manhole rim elevations shall be shown.

24. Show all invert and bottom elevations in manholes and valve vaults or boxes. Show all invert and bottom elevations together with pipe size, and where it can be determined, pipe material, for existing structures having pipes which cross the pipe line being constructed.

25. Locations, elevations and size of all casings shall be shown.

26. Locations and top and bottom elevation of all sheeting, including sheeting left in-place, shall be shown.

27. Where service is not at a right angle (90 degrees) to main line, tie service with length of offset to nearest property line.

28. Provide State Plane Coordinate values for all visible features such as valves, manholes, fire hydrants, water meters, cleanouts and backflow preventers. Also provide State Plane Coordinate values for existing valves and manholes at points of connection or closest to the point of connection and the point of connection itself.

29. Lines that are abandoned in place shall be clearly identified (dashed and bold line type) on the as-builts to include cut and plug locations, pipe material and existing as-built location.

30. For large diameter pipelines 30-inch and above, mechanical restraints shall be identified on the as-built. The restraint system used shall be identified (gland restrained, joint restrained or gasket restrained). If thrust blocks are constructed, the top elevation, outer dimension, thickness of the block, length and location of any sheet piling, if used, shall be recorded by the Contractor’s PSM.

31. Large diameter transmission mains 42-inches and larger shall show each pipe joint, pipe length and station.

B. WATER AND SEWER FORCE MAIN AS-BUILTS:
Water and Sewer Force Main As-builts shall include the following:

1. Plan showing size, material, offset of main, deflections (if any), stations of services, hydrants and fittings at the main (if perpendicular to it), and at main, deflections (if any) and end of service, if at any other angle.

2. Profile showing ground and top of pipe elevations every 100 feet, maximum, and at any change in grade (with corresponding station) and at every fitting. Show size and material of pipe and all fittings with stations. Stationing system shall be the same as that used in the plan view.

3. Distances from main to all valves, fire hydrants and meter boxes shall be shown. Tie hydrants to right-of-way. In established areas, the Surveyor shall run-out right-of-way lines.

4. All "Assembly Detail" shall be provided for all turbo meter installations and for all meters greater than four (4) inches.

5. Label water service as either double, single, irrigation, and so on, based on type of service, including the diameter size.

6. When meter banks are used, show typical detail with size of service line, material and type.

7. Location of all air release valves and top of pipe elevation.

C. GRAVITY SEWER

Gravity sewer as-builts shall include the following:

1. Plan showing manhole numbers and stations, size and material of pipe, manhole to manhole length and slope. The size, material type, station locations and lengths of laterals shall also be shown. Stationing shall be in accordance to the Plans.

2. Profile showing manhole numbers (as per plan), rim elevations, invert elevations in and out of each manhole with directions, length and slope of line. Pipes with a slope less than the RER (formerly Department of Environmental Resource Management) minimum for a particular size of pipe shall not be accepted.

3. Stations of all wyes and tees for laterals and location of cleanouts with distance to property line.

4. Connections to existing sewer collection systems with flow direction shown.

5. Sewer laterals crossing utilities shall show a profile with invert elevation, ground elevations, slope and clearance and elevation at cleanout.

D. SEWER PUMP STATIONS:

The following shall be included on sewer pump stations as-builts:
1. Complete topographic and boundary survey for the pump station shall be signed and signed and sealed by the Florida Licensed Professional Surveyor and Mapper as part of the as-built plans. All information required of a boundary survey shall be contained on the as-built plans to include the legal description of pump station site, easements and right-of-ways abutting the pump station site and location of all surface facilities recorded by a PSM. All utilities within pump station property shall be properly shown, along with their associated elevation and clearance.

2. Show horizontal and vertical locations of all fittings, deflections, or at any significant change of direction, and at a maximum 25-foot intervals for on-site (e.g. on a facility such as a pump station or plant work).

3. Plan and vertical cross-section of the station showing and identifying the piping and mechanical layout. Show elevations for top of wet and dry wells, bottom of wet well, pipe inverts, etc.

4. Electrical schematic as-built.

5. Engineering Report as to the pump manufacturer, size, capacity (TDH), peak design capacity (in GPM) and Bill of Materials.

6. The mechanical, structural and electrical information on as-builts for Pump Stations and Plant work shall be reviewed and signed and sealed by a Florida Registered Professional Engineer when designated as the responsible party for the corresponding portion of the as-builts. The Engineer shall verify that all mechanical, structural and electrical information on the as-built the work was constructed as designed on the Design Plans. Any deviation shall be noted and approved by the Department.

E. PHASING

Phasing of projects must be approved by the Department and such approval communicated to the Inspections Unit. Where phasing is approved the following additional requirements for as-builts shall apply:

1. The phase number must appear prominently on each sheet.

2. A prominent phase line should be drawn at the junctures of the submitted phase with any previous or subsequent phases. The phase line should be labeled and the phase numbers on either side of it identified.

3. Work in previous or subsequent phases should be "hatched" out or dashed in plan and profile and labeled "Not a Part" to clearly eliminate it from the as-builts.

4. Clearly show what is part of the present phase and what is part of previous or subsequent phases at the tie-in points or phase lines. Make certain that this matches what was previously submitted with any earlier phases.

5. Unless otherwise authorized, phases shall end at a valve for water and force mains and at
a manhole for sewer.

PART 2 - PRODUCTS

(Not Used)

PART 3 - EXECUTION

3.01 ACQUISITION OF AS-BUILT INFORMATION

As-built information of underground facilities shall be taken in the field concurrently with the progressing construction and before it is backfilled. The Department has the authority to order re-excavation of work that was covered without accurate survey measurements.

3.02 CHECKLIST

The attached form titled “Miami-Dade WASD Minimum Requirements As-built Plan Submittal Checklist Form” shall be signed by the Florida Licensed Professional Surveyor and Mapper and submitted with the As-buils.

END OF SECTION