



CHARLOTTE COUNTY UTILITIES

MINIMUM DRAWING AND SUBMITTAL REQUIREMENTS FOR POTABLE WATER, WASTEWATER, AND RECLAIMED WATER PROJECTS

Date:

DRAFT



Date: August 1, 2023

MINIMUM DRAWING AND SUBMITTAL REQUIREMENTS FOR POTABLE WATER, WASTEWATER, AND RECLAIMED WATER PROJECTS

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CHARLOTTE COUNTY UTILITIES DEPARTMENT

MINIMUM DRAWING AND SUBMITTAL REQUIREMENTS FOR POTABLE WATER, WASTEWATER, AND RECLAIMED WATER PROJECTS

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This document describes the minimum format, technical content, and submittal requirements for Charlotte County Utilities Department to accept design, as-built, record drawings and GIS CAD data. All plans, documents and electronic data submitted for review are subject to these requirements. This document should be used in conjunction with the document Charlotte County Utilities Department "CCU CADD Standards" when preparing all plans. This document does not relieve the Engineer of Record (EOR) or the applicant of their responsibility to comply with all State, County, and Local regulations. This document does not describe drawing or submittal requirements for every situation, and some requirements may not apply in every case. The Utility Department reserves the right to comment on all aspects of the proposed designs and to require changes to the proposed utility infrastructure as part of the plan review process. Deviations from these requirements may be approved during the formal review process, if warranted, at the discretion of Charlotte County Utilities Department.

As used in this document, the term 'coordinate' or 'coordinates' mean northing and easting values in the **NAD 1983 2011 State Plane Florida West FIPS 0902 Ft US** Coordinates shall be accurately provided and shown to a precision of the nearest tenth of a foot, AutoCAD coordinate assignment **NSRS11 2011 Florida State Planes, West Zone, US Foot**. All elevations will be based on **NAVD 88**. NGVD 29 will NOT be accepted.

I. REQUIRED SUBMITTALS, FORMATS, AGREEMENTS AND CONTRACTS

1. Submittals to Charlotte County Utilities Department for review of proposed utility plans must be accompanied by the following:
 - a. Letter of Transmittal listing the documents being forwarded to Charlotte County Utilities Department for review. Failure to provide a Letter of Transmittal with each submittal may result in a delay in the review of the project. Subsequent submittals should reference the assigned Charlotte County Utilities Department Project Number which will be provided with the initial review comments.

- b. Signed application containing all requested information and accompanied by a check made out to Charlotte County Utilities Department to cover the application review fee shown on the application form. Additional review fees may be required depending upon the number of reviews that must be conducted.
 - c. Future submittals of project documents should be accompanied by a letter detailing how each comment made by the CCU staff was addressed. The drawings themselves must have each revision properly clouded and numbered.
2. Number of Plan Submittals, Technical Reports, and Permits:
 - a. One complete sets of plans including landscaping signed and sealed by a Professional Engineer licensed in the State of Florida are required for the initial engineering review.
 - b. Water main sizing form
 - c. For all projects an AutoCAD file (DWG) on CD-R that conforms to the requirements of 1.5 below must be submitted.
 - d. One copies of related Technical Reports, if required, signed and sealed by a Professional Engineer licensed in the State of Florida (See Technical Reports section for applicability).
 - e. Submission of FDEP permit applications that are required for construction of the proposed utilities should be delayed until the plans for the project have received final utility plan approval from CCU. Any permit applications that are provided may be returned to the applicant/permittee without further review depending upon the complexity of the project and the status of the project review as determined by Charlotte County Utilities Department.
3. Upon completion of the initial review a redline PDF will be emailed to the EOR. The email will advise the Developer.
4. Final utility plan approval is subject to any additional issues that may arise during the Charlotte County Site Plan Review Process which may affect the utility plan. Utility plans that are submitted for Charlotte County Site Plan Review must be the version approved by Charlotte County Utilities Department. Plan modifications of any kind resulting from the Site Plan Review Process will require re-approval by Charlotte County Utilities Department. FDEP permit applications shall be based upon the final approved utility plans, including any last-minute modifications.
5. Once final utility plan approval is given by Charlotte County Utilities Department, the Developer/Owner will be advised to submit one signed and sealed copy of the drawings for stamping and Engineers Estimate of Probable Cost (EOPC) in addition to an electronic submittal.
6. The Developer/Owner shall also include an Electronic Submittal of all drawings for the submitted project in AutoCAD DWG format to the County for each submittal. See **CCU CADD Standards** for submittal requirements.
7. Charlotte County Utilities Department will stamp the four sets of plans approved and will return two sets to the Engineer of Record. Approvals are valid for a period of one (1) year from the date of approval.
8. Once the plans are stamped approved an Email with a PDF of signed and sealed FDEP form must be submitted. The FDEP permit applications must be submitted for the necessary signatures (see section on FDEP Permit Applications and Certificates to Operate for additional requirements). Depending upon the project, additional permits may have to be obtained by the applicant prior to construction. It is the responsibility of the applicant and the Engineer of Record to identify and obtain all permits that are necessary prior to installation of the utilities.

9. Once the plans are stamped approved the Engineer of Record shall submit an Engineer's Estimate of Probable Cost for Charlotte County Utilities Department review that is prepared utilizing the construction cost estimate spreadsheet format posted on the Charlotte County Utilities Department website.
10. Once the plans are stamped approved the applicant must enter into a Developer's Agreement with Charlotte County Utilities Department prior to the start of utility construction. The applicant must contact Charlotte County Utilities Department for further information regarding the Developer Agreement requirements. No preconstruction meeting will be scheduled until the Utility Agreement executed and fees are paid.
11. Projects that involve the use of reclaimed water for irrigation or other permitted purposes must enter into a Reclaimed Water Supply Contract with Charlotte County Utilities Department prior to the delivery of reclaimed water. The applicant must contact Charlotte County Utilities Department for further information regarding the Reclaimed Water Supply Contract.

II. FDEP PERMIT APPLICATIONS AND CERTIFICATES TO OPERATE

1. All FDEP permits that are required for the project must be completed, signed and sealed by the Engineer of Record, and signed by the Permittee or their authorized agent. The necessary forms may be obtained from the FDEP Website. It is the responsibility of the Engineer of Record and Permittee to properly fill out, sign and seal the permit application forms prior to submittal to Charlotte County Utilities Department.
2. All drawings submitted for Utility Certification shall be reviewed by the Utility Department prior to submitting to FDEP. Any discrepancies found in that review shall be corrected, re-submitted and reviewed. No Utility Certification shall be submitted without Utility Department approval.
3. The Charlotte County Utilities Department data for the water and/or sewer plants that serve the proposed project may be found on the Charlotte County Utilities Department Website under the Engineer link. The EOR is responsible for identifying the facilities that service the project. This data is updated periodically so the applicant should log on to the website each time a permit application is being prepared.
4. It is the responsibility of the Permittee and the Engineer of Record to submit the signed FDEP application form(s) to the FDEP and to obtain the required permit prior to construction of the utilities.
5. It is the responsibility of the Permittee and the Engineer of Record to obtain a "Certificate to Operate" the utility system from the FDEP prior to placing the utility system into service. Application forms to certify the utility for operation can be found on the FDEP website and must be submitted to Charlotte County Utilities Department for the necessary signatures prior to being submitted to the FDEP for approval. Failure to obtain FDEP approval to place a utility into operation may result in the Permittee being fined by the FDEP.
6. Charlotte County Utilities Department is not the only utility providing service to the County therefore the EOR should verify service by Charlotte County Utilities Department prior to submitting any permits.

III. GENERAL PLAN REQUIREMENTS

1. All drawings shall be submitted on 24" x 36" size sheets.

2. All dimensioning shall be in English Units at a scale shown on an Engineering Scale between the ranges discussed under the section Utility Plan Sheet Requirements.
3. All information on the drawings shall be clear and legible. Utility Department reserves the right to reject any plans found to be unreadable with no further comment than the simple statement of that fact.
4. The drawing set shall contain a Legend listing all abbreviations and symbols used along with an identification of their meaning.
5. Sheets shall be numbered and if an index is required as discussed elsewhere in this document, the numbers shall match the index provided on the Cover Sheet.
6. The general order of sheets in the plan set shall be as follows: Cover Sheet, Key Sheet, Overall Layout Sheet, Utility Plan Sheets, Landscape Sheet, Conflict Sheet (if deemed necessary, see below), and Construction Detail sheet(s).
7. All plan sheets shall have the Vertical Datum Source and Elevation in Datum **NAVD 88. No other Datum will be accepted.**
8. All plan sheets shall, once assigned, include the Charlotte County Utilities Department Project Number.
9. The drawing name of the electronic file must be legibly printed on each submitted individual layout sheet and printed sheet that it corresponds to.

IV. COVER SHEET REQUIREMENTS

The following information shall be provided:

1. Project Name and Section, Township, Range of its location.
2. Name of the engineering firm.
3. Engineering firm's telephone number, fax number, mailing address and email address.
4. Engineer of Record's Name and Florida Registration Number.
5. Seal and Signature of the Engineer of Record and/or Surveyors' seal and signature.
6. Date of Plan Preparation
7. Revision block to note date of all subsequent plan revisions
8. A general location map showing major roads with the location of the project identified.
9. A specific location map showing the Property in Question (P.Q.) and all local existing roads.
10. Basis of Bearing Information
11. Benchmark Information
12. An index of the sheets within the plan set shall be provided unless the plan set has 4 sheets or less.
13. The statement:

"CONSTRUCTION AND MATERIALS SHALL BE IN ACCORDANCE WITH CHARLOTTE COUNTY UTILITIES UTILITY DEPARTMENT STANDARDS AND SPECIFICATIONS. PLANS ARE IN ACCORDANCE WITH CHARLOTTE COUNTY UTILITIES DEPARTMENT 'MINIMUM DRAWING AND SUBMITTAL REQUIREMENTS FOR POTABLE WATER, WASTEWATER, AND RECLAIMED WATER PROJECTS' DATED July 7, 2023. STATE PLANE COORDINATES (FEET) WILL BE SUPPLIED FOR THE RECORD DRAWINGS."

14. Tally Blocks shall provide for the following:

- a. Water Meter Tally Block showing the number, size, and type of meter to be installed, i.e. Residential, Commercial, Irrigation, etc including number of corresponding Equivalent Residential Connection(s) ERCs. Water meters must be sized utilizing the Water Meter Sizing Form shown in Appendix B. Completed forms must be submitted for each meter shown in the Water Meter Tally Block.
- b. Reclaim Water Usage Tally Block. For projects that include the installation of Reclaim Water transmission and/or distribution piping a tally block shall be included showing the number of irrigable acres broken down by use, i.e. residential, commercial, or golf course, the Average Reclaim Water Demand per day in MGD at the application rate of 1 inch per week, per acre, whether or not there is reclaimed water storage facilities available on-site and, if so, the type of storage (pond, tank) and volume of storage being provided.

15. Private sewer collection systems require special approval by Charlotte County Utilities Department. For "Developer" projects involving private sewers provide the following statement:

"THIS PROJECT HAS BEEN ACCEPTED CONTAINING PRIVATE SEWERS. PRIVATE SEWERS MAY SEVERELY LIMIT THE ABILITY TO SELL PORTIONS OF THIS PROPERTY IN THE FUTURE. ALL WATER METERS FOR THIS PROJECT MUST BE IN THE NAME OF THE ONE ENTITY THAT IS RESPONSIBLE FOR MAINTAINING THE PRIVATE SEWERS."

16. For projects that are dedicating a 'Blanket' Easement for access and maintenance of assets being turned over to Charlotte County Utilities Department, a statement indicating the intent to dedicate such an easement shall be provided.

V. OVERALL LAYOUT SHEET REQUIREMENTS

The following information shall be provided:

1. Title Block.
2. Engineer of Record's Name and Florida Registration Number
3. Engineer's Seal and Signature
4. Project Name
5. Horizontal Scale
6. Date drawings were prepared.
7. A revision block with latest revision date
8. North arrow with orientation to the top or right of the sheet preferred. However, such orientation may be rotated in order to provide additional coverage and a larger more readable plan.
9. The drawing shall contain an overall layout of the project on a single sheet, if possible, which indicates all phases of construction, existing and proposed utilities, storm sewers, and building numbers where applicable. The utilities shall include type of mains (water, gravity sewer, force main, vacuum main, reclaim water main, etc); fire hydrant locations; grease interceptor size and location; vacuum pit location; the direction of flow of the gravity sewer and force mains; and a designation (number and/or letter) of the manhole(s), vacuum pits, pump/lift stations.
10. For drawing sets containing more than one plan view sheet, the overall layout shall show the coverage of each sheet with corresponding match lines and sheet references.


VI. UTILITY PLAN & PROFILE SHEET(S) REQUIREMENTS

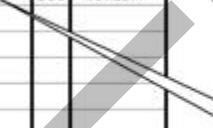
The following information shall be provided:

1. Title Block.

2. Engineer of Record's Name and Florida Registration Number
3. Engineer's Seal and Signature
4. Project Name
5. Match Lines to assist in sheet to sheet navigation
6. Horizontal and Vertical Scale (on profile sheets)
7. Vertical Datum Source and Elevation
8. Date of plan preparation.
9. A revision block indicating the revision number, date, description and person that revised the plans as well as if revisions are made, each revision properly clouded and numbered with a numeric revision symbol which corresponds with the plan set. See examples 1 and 2 below.

Example 1

| No. | Description | Revision | By | Date |
|-----|-------------------------|---|-----|-----------|
| 1 | DESCRIPTION OF REVISION |  | CCU | 1/01/2011 |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |

 **REVISION SYMBOL**

Example 2



10. North arrow with orientation to the top or right of the sheet preferred. Alternate North Arrow orientation may be acceptable if such orientation improves the coverage of the project on each sheet.
11. The horizontal scale shall be a common scale shown on an Engineering Scale between the ranges of 1" = 10' and 1" = 50'.and be selected so drawings are readable. Larger scale blow-ups or details should be provided in congested areas. Charlotte County Utilities Department may require such blow-ups should they be deemed necessary to construct the proposed utilities.
12. Show all existing and proposed above and below ground utilities including utility pole and light stanchion locations. The attributes that must be provided for the existing and proposed utilities are discussed under the heading 'Piping Plan Views.'
13. Show all public and private roadways and identify the Right-Of-Way (R/W) line, Edge of Pavement (EOP), and Centerline. Provide the pavement width and dimension the R/W. Show the location

of any sidewalks or walkways. In addition, indicate if new roads are to be private or turned over to the County.

14. Show and dimension all existing and new easements and reference as to whether by plat or otherwise. For existing easements, reference the recorded OR Book and Page number. All existing easements are to be identified as to type, i.e. Utility Easements, Drainage Easements, FPL Easement, etc. Any utilities that are to be dedicated to Charlotte County Utilities Department as a result of these engineering plans require the grant of easements if not located within the road Right-Of-Way (R/W) and shall comply with the following:

Easement descriptions are to be written clearly on 8 ½ "x 11" paper with a point of beginning and a point of termination. A sketch drawn to scale and on 8 ½ "x 11" paper shall accompany the description. The sketch is to reflect the description and shall carry additional information to facilitate construction of the worded description. Street corners are to be shown and the description/sketch should relate the property being described to the streets. The scale shall be such to enable the direction of lines to be clearly observed. Where warranted, the sketch is to be on more than one sheet with the proper match lines shown for each sheet. Charlotte County Utilities Department reserves the right to approve the description and sketch. All such easements shall be included in the drawings and the electronic DWG file that will be submitted to Charlotte County Utilities Department.

See the Design Manual for easement requirements for 'typical' utility installations. Charlotte County Utilities Department reserves the right to amend the easement requirements on a case by case basis depending upon the special circumstances that may exist. In all instances, easements must include access to or be contiguous to public ROW to provide for future vehicle access in order to perform maintenance by the utility.

15. Indicate facilities that are or will be owned by Charlotte County Utilities Department verses private or other utilities' facilities.

16. In addition to the above, for Site Plan projects provide the following:

- a. Show the perimeter boundary of the Property in Question (P.Q.) in a heavy line weight.
- b. The block and lot number(s) of the lot(s) comprising the PQ.
- c. The block and lot numbers of all adjacent properties.
- d. The street addresses.
- e. Show the outline of each building to be serviced. Except for single family and multi-family residential buildings, indicate the following:
 - i) The total gross square footage of each building with a breakdown of the square footage by use, i.e., office, retail, warehouse, etc.
 - ii) If the building is a restaurant indicate the number of seats.
 - iii) If the building is a hotel, indicate the number of rooms and include the square footage of any office space or conference facilities.
 - iv) The information provided for the building (s) should match the information used in computing the water demand and wastewater flows shown in the respective Tally Blocks shown on the Cover Sheet.
- f. Indicate the limits of pavement, parking areas, and sidewalks.

- g. Provide a copy of the landscaping plan. In general, no landscaping or landscaping improvements such as retaining walls, planters, fencing, and decorative pavers should be installed within existing or proposed utility easements. The proposed occupation of any existing easement requires application to the Charlotte County Real Property Department or Building and Construction Services, where applicable, for approval.

17. In addition to the information above, for Subdivisions provide the following:

- a. Indicate all boundary lines for any property to be served. Show coordinates for boundary property corners and reference one property corner to a section corner.
- b. Identify the property by the proposed or existing block and lot number.
- c. Show the outline of each building to be serviced.
- d. Except for single family and multi-family residential buildings, indicate the total gross square footage of each non-residential building and indicate its proposed use and the number of bathrooms being installed, if any.
- e. For multi-family residential buildings, show the number of units in the building and provide building and unit numbers.
- f. Show existing and proposed roadways including the R/W width, width of pavement, edge of pavement, driveway dimensions, and sidewalk dimensions and locations. Indicate if roads are private or public.
- g. The location and dimensions of all existing and proposed utility easements.

18. Piping Plan Views

- a. All proposed utilities and location of services should be shown. Each water main, gravity sewer main, force main, vacuum main, low-pressure force main, and reclaim water main shall be marked with its size, type of material, and class on each sheet. Each gravity sewer main and vacuum main shall also indicate the pipe slope. Typical fittings shall be marked with its size and material if the material is different than the main's material. Valves shall be marked with their size and type. Each water service line and sewer lateral shall be marked with its size, length, material, class, and slope (sewer laterals only). With the exception of length, water and sewer services may be marked on each plan sheet as 'Typical' if appropriate. All material and classes must conform to Charlotte County Utilities Department design specifications.
- b. Show the design location of all Charlotte County Utilities Department facilities including distance from rights-of-way lines, property lines, or edge of pavement to each main. Distances are not required for water service lines and meters or low-pressure sewer laterals unless specifically requested by Charlotte County Utilities Department. Low pressure systems should include the offset from the building for each tank and the offset of the low-pressure line from the nearest side property line.
- c. Show all horizontal deflection points on all mains.
- d. Blow-up views of utility configurations shall be provided in congested areas.
- e. Show the location of all pressure test points (water and force mains) and bacteriological sampling points (water mains). All tests should be valve to valve.
- f. Show the size and general location of all water, irrigation, and reclaim water meters. All meters are to be located at the road Right-of-Way (R/W). When this is not practical or possible a separate easement on the property must be dedicated up to and including the meter.

- g. Show the location of air/vacuum releases, blow off assemblies, fire hydrants, fittings, vacuum air vent risers, and thrust blocks.
- h. All manholes, vacuum pits and pumping stations shall be shown and numbered. The piping inverts and rim elevations shall be provided.
- i. The location, size, material, and elevations (inverts and castings/rims) of all existing and proposed storm sewers and appurtenances (catch basins, inlets, manholes, headwalls, outlet structures, etc.) shall be shown in areas where water, sewer, vacuum, and reclaim water utilities are existing or are to be installed. The plans must also include the location and grading of all swales and storm water detention facilities in proximity to the utilities, existing or proposed. Construction details of storm water structures should be provided on the plans if such structures are in close proximity to existing or proposed utility locations.
- j. The location of any other piping that may be in conflict with the proposed utility installations must be provided on the plans.
- k. All conflicts shall be identified and numbered. Where the profile view does not clearly show the conflict encountered a separate 'Conflict Detail' shall be provided. The Conflict Detail shall show the size, material and class of each pipe, the invert and Top of Pipe elevations, and the proposed separation of each utility. Where the plans have an excessive number of conflict details, a separate Conflict Detail Sheet shall be provided in the plan set. If a separate Conflict Detail Sheet is not provided and Charlotte County Utilities Department determines that Conflict Details should be shown on a separate sheet(s), the Engineer of Record shall add such sheets to the plan set prior to re-submittal of the plans.
- l. When a Conflict Box is required, it should include all invert elevations, pipe diameters, and box dimensions.
- m. All existing and 'To Be Abandoned' utilities shall be shown. The method of abandonment shall be noted, i.e. pressure grouted and capped, crushed in place, etc. Where abandonment is to be in accordance with FDEP requirements the governing regulation shall be cited by chapter and verse. Where abandonment in place is not desirable, the utilities shall be shown as 'To Be Removed.'

19. Piping Profiles

- a. Profiles are required for all gravity sewer mains, vacuum mains, water mains, force mains, and reclaim water mains that are located within existing and proposed road R/W or within existing or proposed easements. The profile will show the existing and finished grade line; the size, material type, and class of pipe on each sheet; manhole and vacuum pit locations with pipe inverts and rim elevations; drop manhole locations, if applicable; doghouse or core bored manholes, if applicable; lengths of pipe between appurtenances with pipe slopes; wet well locations including rim and invert elevations of all pipes and force mains and vacuum mains; attributes of mains, fittings, valves, hydrants, air release valves, vacuum air vent risers etc.; and locations of conflicts with separation dimensions and elevations. Where sewer laterals maybe in conflict with paralleling water mains, gravity sewer profiles shall include sewer lateral locations. All maintenance access structures manholes, vacuum pits and pump stations must be numbered.
- b. All vertical deflection points should be shown.
- c. Piping profile and plan views shall be aligned.
- d. Profiles at all boring and horizontal directional drilling locations shall be provided.
- e. Vertical scale shall be between 1" = 1' and 1" = 5'.

- f. Conflict details should be added when required.

VII. STANDARD SPECIFICATIONS AND DETAILS

1. All utility construction shall be in conformance with the current Charlotte County Utilities Department Standard Specifications and Details which can be found on the Charlotte County Utilities Department Website.
2. Construction details shall be included in the plan set and shall conform to the current Charlotte County Utilities Department Standard Details which can be found on the Charlotte County Utilities Department Website. Only the details that pertain to the proposed construction should be included in the plan set.
3. The Engineer of Record must contact Charlotte County Utilities Department for the necessary lift station or pump station construction details which will be provided once the size and type of lift station or pump station has been determined and approved by Charlotte County Utilities Department.

VIII. UTILITY CERTIFICATION DRAWINGS

1. Utility Certification Drawings:

Utility Certification drawings refer to the drawings required to certify the utility assets through Florida Department of Environmental Protection (FDEP). A set shall be signed and sealed by a Florida Registered Surveyor and Mapper (PSM). The drawings show the actual construction location of the newly installed utility assets. The EOR shall retain and provide a signed and sealed drawing set of the Utility Certification drawings provided by the PSM with the other project records to Charlotte County Utilities Department. All utility assets refer to the potable water, reclaimed water, gravity sewer, force mains, vacuum mains, low pressure force mains and all facilities that include collection and distribution of utilities. All drawings submitted for Utility Certification shall be reviewed by the Utility Department prior to submitting to FDEP. Any discrepancies found in that review shall be corrected, re-submitted and reviewed. No Utility Certification shall be submitted to FDEP without Utility Department approval.

2. A signed and sealed letter from the Florida Registered Surveyor and Mapper (PSM) with the following certifying statement:
 - a. "I hereby certify that the utility certification location information of the water, sewer, and reclaimed water facilities shown on these drawings conforms to the STANDARDS OF PRACTICE for PROFESSIONAL SURVEYORS AND MAPPERS Rule 5J-17 F.A.C. pursuant to Florida Statutes 472.027 and special instructions and that said utility certification drawings are true and correct to the best of my knowledge and belief as surveyed under my direction."
3. The Developer/Owner/EOR/Surveyor shall also include an Electronic Submittal of all drawings for the submitted project in AutoCAD DWG format to the County for each submittal. See **CCU CADD Standards** for submittal requirements.
4. One paper copies.

IX. RECORD DRAWING REQUIREMENTS FOR PRIVATE DEVELOPMENT

1. The EOR will prepare or have prepared a complete and contiguous set of record drawings based on the Utility Certification information provided by a PSM. Each sheet of the record drawings must be signed and sealed by the EOR. The cover sheet is to be signed and sealed and shall include the following statement:

"I certify that these record drawings have been reviewed by me or by individual(s) under my direct supervision and that these drawings incorporate the information contained in the Utility Certification Drawings. To the best of my knowledge and belief these record drawings substantially reflect the utility assets as constructed. The accuracy of these record drawings is reliant on the accuracy applied by the surveyor who certified the as-built drawings."

2. Record Drawings will at a minimum include the information contained in the approved design/construction drawings and Utility Certification Drawings, plus the following additional requirements.
3. Drawings will be a complete and contiguous set including cover sheet, key sheet, index (if one was included in the approved design/construction drawings), Key sheet, legend, standard details, and any other sheets included in the approved design set.
4. Record Drawings shall document the final construction configuration of all newly installed utility assets and all connections of the newly installed utility assets to the existing utility system. Remove all revision triangles and incidences of the term proposed and replaced with installed, to convey what was installed.
5. The Record Drawings shall be prepared in accordance with the section entitled Minimum Record Drawing Contents that follows.
6. The Developer/Owner/EOR/Surveyor shall also include an Electronic Submittal of all drawings for the submitted project in AutoCAD DWG format to the County for each submittal. See **CCU CADD Standards** for submittal requirements.

X. RECORD or AS BUILT DRAWING REQUIREMENTS FOR CAPITAL IMPROVEMENT PROJECTS (CIP)

1. At the end of the Capital Improvement Project the EOR shall prepare the Record drawings, or the Florida Professional Surveyor and Mapper will prepare As Built drawings, as a complete and contiguous set of record or As Built drawings based on the Utility Certification information provided by a PSM. Each sheet of the record or as built drawings must be signed and sealed by the EOR or PSM. The cover sheet is to be signed and sealed and shall include the following statement:

"I certify that these record drawings have been reviewed by me or by individual(s) under my direct supervision and that these drawings incorporate the information contained in the certified utility drawings. To the best of my knowledge and belief these record drawings substantially reflect the utility assets as constructed."

2. Record or As Built Drawings will at a minimum include the information contained in the approved design/construction drawings and as-built drawings, plus the following additional requirements.
3. Drawings will be a complete and contiguous set including cover sheet, key sheet, index (if one was included in the approved design/construction drawings), legend, standard details, and any other sheets included in the approved design set.
4. Record or As Built Drawings shall document the final construction configuration of all newly installed utility assets and all connections of the newly installed utility assets to the existing utility system. Remove all revision triangles and incidences of the term proposed and replaced with installed, to convey what was installed.
5. The Record or As Built Drawings shall be prepared in accordance with the section entitled Minimum Record Drawing Contents that follows.
6. The Developer/Owner/EOR/Surveyor shall also include an Electronic Submittal of all drawings for the submitted project in AutoCAD DWG format to the County for each submittal. See **CCU CADD Standards** for submittal requirements.

XI. MINIMUM RECORD OR AS BUILT DRAWING CONTENTS

1. If the amount of information required on record drawings requires the drawing author to organize its presentation in order to make the drawings readable, it may be necessary to put utility assets information on separate sheets and/or use a table to show coordinate information. All elevations will be based on **NAVD 88. No other Datum will be accepted.**
2. All facilities shall be labeled with a designator and referenced in a table with the surveyed coordinates and description of the facility.
3. Show the location of easements used by the utility assets. All easements must be recorded, and the OR Book and Page Number shall be shown on the drawing.
4. Indicate all boundary lines for project property. Show coordinates for all boundary property corners and reference one property corner to a section corner.
5. Dimension pipe joint location offsets where utility asset piping cross.
6. Indicate the length of gravity sewer and vacuum piping and actual slope between maintenance access structures (manholes, vacuum pits) and the stationing from the upstream maintenance access structure to each service lateral at main.
7. Show all abandoned in place facilities including the extent and method of abandonment.
8. All distances from valve to valve, valve to fitting, manhole to manhole and fitting to fitting shall be in incremental measurements.
9. Show elevations to the nearest tenth of a foot for:
 - a. Top of pipe for utility assets at deflection points and every 150 to 200 feet along straight runs.
 - b. Top of pipe for utility asset fittings.
 - c. Top of pipe for connection to existing facilities.
 - d. Top of operating nut for valves.

- e. Top of pipe of utility asset where they conflict with other facilities (drainage, telephone, cable TV, electric, etc.)
10. Show elevations to the nearest one hundredth of a foot for:
- a. Maintenance access structure (manhole, vacuum pits) rims.
 - b. Inverts of every gravity sewer pipe, including clean-out inverts, vacuum pipe inverts, low pressure inverts and force main connections to manholes and valve pits.
 - c. Lift station top of slab, bottom of wet well, influent pipe inverts and control set points.
11. State Plane Coordinates will be provided for Charlotte County Utilities Department maintained facilities, including:
- a. Utility assets at deflection points and on line a minimum of 150 to a maximum 200 feet along straight runs.
 - b. The center of each maintenance access structure (manhole, vacuum pit), fitting, valve, blow off, hydrant, water meter, sewer cleanout, vacuum air vent risers, lift station wet well, double detector check or other non-pipe water or sewer facility.
 - c. The location on the potable and reclaimed water main of each tap for a service line.
 - d. The location on the gravity sewer main and vacuum main of each service lateral.
 - e. The location of each connection to existing facilities.
 - f. The corners (vertices) of all easements being granted to the County as a part of the project.
 - g. Other locations and / or assets designated by Charlotte County Utilities Department.