

**DIVISION I  
GENERAL REQUIREMENTS**

**SECTION 11**

**PLAN REVIEW, APPROVAL, CONSTRUCTION, AND ACCEPTANCE OF WATER  
AND WASTEWATER IMPROVEMENTS**

**11.1 PLANS AND SPECIFICATIONS**

**11.1.1 GENERAL**

All submitted plans shall be on standard size sheet measuring 24 inches x 36 inches with a title block and border. Graphic scale(s) shall be provided on each sheet and all lettering shall be 1/10 inch or larger to permit photographic reproduction. Submittal of specifications will only be required when special facilities outside the scope of this MANUAL are proposed. All PLANS sheets and the title page of submitted specifications must be signed, sealed, and dated by the DEVELOPER's ENGINEER.

**11.1.2 MASTER PLAN**

Whenever possible, the entire potable water, reclaimed water, and wastewater systems shall be shown on a single Master Plan. The Master Plan shall indicate the general locations of all mains, manholes, valves, hydrants, services, and service laterals with respect to the proposed development improvements and the existing water and wastewater systems. Main sizes shall be indicated in the Master Plan.

**11.1.3 PLAN AND PROFILE**

All gravity sewers, wastewater force mains, and off-site potable and reclaimed water mains shall be drawn in plan and profile. On-site potable and reclaimed water mains may be shown in plan view only.

Whenever possible, on-site potable water, reclaimed water, and wastewater systems shall be shown on the same PLANS sheet. As a minimum, the plan and profile drawings shall include the following information:

- a. General information such as north arrow, names of designer and engineer, revision block with dates, graphic scale(s), and sheet number.
- b. Profile with elevations at 100 foot interval, or more frequently if required by good design practice.

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- c. Development layout with horizontal and vertical controls. All elevations shall be based on National Geodetic Vertical Datum (NGVD). Each project shall have at least one permanent benchmark or one every 1000 feet when dictated by the project size.
- d. All known conflicts with other utility and drainage systems.
- e. All manhole locations and rim elevations for manholes.
- f. Pipe data including size, lengths, material, and slopes.
- g. Size, type, and locations of fittings, valves, hydrants, air release/vacuum relief, and other related appurtenances.
- h. Limits of pipe deflection, when applicable.
- i. Limits of special exterior coatings.
- j. Limits of special bedding requirements.
- k. Pipe restraint requirements.(See STANDARD DRAWINGS)
- l. Details of connection to existing systems.
- m. Locations(s) and general layout of wastewater pumping stations.
- n. Special construction notes regarding cover, horizontal and vertical control, special construction requirements, and references to standard and special details.

### 11. 1. 4      STANDARD DRAWINGS AND DETAILS

The PLANS shall include all general STANDARD DRAWINGS as shown in Part 3 of this MANUAL, plus the applicable sewer pump station STANDARD DRAWINGS when required. These STANDARD DRAWINGS, available on 3½ inch diskettes shall be reproduced conforming to Section 11.1.1 and in the format and configuration provided by the CITY.

The STANDARD DRAWINGS shall only be modified by the CITY, except for the filling in of blank information areas by the DEVELOPER's ENGINEER. Special details shall be prepared by the DEVELOPER's ENGINEER for aerial and underwater crossings of rivers, streams, canals, and ditches. Other special details shall be prepared by the DEVELOPER's ENGINEER as required.

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11. 1. 5          SCALE

The master plan shall be prepared at a scale not to exceed 1 inch to 200 feet. Plan and profile sheets shall not exceed a scale of 1 inch to 50 feet. Special details shall be of a sufficiently large scale to show pertinent construction information.

**11. 2   WATER AND WASTEWATER IMPROVEMENTS**

11. 2. 1          GENERAL

This Section shall apply to all potable water, reclaimed water, and wastewater improvements that are constructed in compliance with the CITY's Land Development Regulations, as amended, or to be dedicated to the CITY. Such water, wastewater, and reclaimed water improvements shall be designed, reviewed, constructed, and accepted in accordance with the criteria established in this Section. Existing non-conforming developed properties, other than single and duplex family residential, shall be brought into compliance with this MANUAL when redevelopment, conversion from apartments to condominiums, or change of use is proposed and/or the general public's health, safety, and welfare is of concern.

11. 2. 2          DESIGN REVIEW AND PRECONSTRUCTION CONFERENCE

Design of water, wastewater, and reclaimed water improvements shall be in compliance with the design standards in Division II and the specifications outlined in Divisions III, IV, and V of this MANUAL. PLANS will be reviewed by the Utilities Department as part of the plan review process. A pre-construction conference shall be conducted at City Hall by the CITY at least forty eight (48) hours, but not more than two (2) weeks, prior to the start of any construction activities. Representatives of the CITY, DEVELOPER, CONTRACTOR, and DEVELOPER'S ENGINEER shall be required to attend. The DEVELOPER shall be responsible for notifying all affected utilities and governmental agencies of the conference.

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11. 2. 3 CONSTRUCTION INSPECTION AND CERTIFICATION

The DIRECTOR or his designated representative(s) will periodically inspect all construction subject to these standards and specifications. A set of the City approved engineering plans shall be maintained on-site at all times.

After all required improvements have been installed, the DEVELOPER's ENGINEER shall submit certification to the CITY that the improvements have been constructed substantially according to approved plans and specifications. Non-compliance with approved plans or specifications or evidence of faulty materials or workmanship observed by the CITY will be called to the attention of the DEVELOPER or DEVELOPER's ENGINEER. If not corrected in an expeditious manner, all work on the project will be suspended, the certificate of occupancy/completion withheld, and/or the code enforcement procedures initiated. Laboratory tests may be required as deemed appropriate by the CITY at the expense of the DEVELOPER.

11. 2. 4 MAINTENANCE, MATERIALS, AND WORKMANSHIP WARRANTY BOND

A bond shall be posted by the DEVELOPER and executed by a company authorized to do business in the State of Florida that is satisfactory to the CITY, payable to the City of Sanford in the amount of ten (10) percent of the actual construction cost of all required water and wastewater improvements to be owned and maintained by the CITY. An itemized cost breakdown of the construction costs for all water and wastewater improvements, separated into offsite and onsite sections as applicable, shall be submitted along with the bond. Such bond shall guarantee maintenance of all improvements intended to be owned and maintained by the CITY for a two (2) year period. Said guarantee shall apply to the materials, workmanship, and structural integrity of all water and wastewater systems and miscellaneous related facilities, including mechanical equipment, for a two (2) year period commencing after a Certificate of Completion has been issued by the CITY. See Appendix B for required forms. As an alternative to the provision of a surety bond from a Florida licensed company, the DEVELOPER may provide a certified cashier's check or an irrevocable letter of credit acceptable to the CITY through a State of Florida recognized financial institution.

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11. 2. 5            CERTIFICATE OF COMPLETION

After successful completion of all potable water, reclaimed water, and wastewater improvements, and after receipt of the required documents outlined in Appendix B, the CITY will provide a "Certificate of Completion" verifying the satisfactory construction of all improvements intended to be owned and maintained by the CITY.

**11. 3        MISCELLANEOUS WATER AND WASTEWATER IMPROVEMENTS**

All water, wastewater, and reclaimed water improvements constructed which are intended to be privately owned, operated, and maintained shall be designed, reviewed, and inspected in accordance with this Manual as required by the DIRECTOR.

**11. 4        COMPLIANCE WITH OTHER REGULATORY REQUIREMENTS**

It shall be the responsibility of the DEVELOPER to obtain and comply with all applicable Federal, State, County, and Local regulatory permits. CITY approved PLANS that are required to be modified by another regulatory agency or agencies shall be resubmitted to the CITY for re-approval.

**11. 5        RECORD DRAWINGS**

The DEVELOPER's ENGINEER shall submit four sets of signed and sealed prints of the Record Drawings not less than 72 hours prior to the Final Inspection by the CITY. A certified set of reproducible Record Drawings on three (3) mil black line Mylar sheets, plus six (6) sets of prints, shall be submitted to the CITY, revised as necessary after the Final Inspection, prior to the issuance of the Certificate of Completion for the improvements. The DEVELOPER's ENGINEER shall be responsible for recording information on the approved PLANS as construction progresses. The CITY strongly recommends that the CONTRACTOR's field record PLANS be photocopied in their entirety as Record Drawings. Record Drawings submitted to the CITY as part of the project acceptance shall comply with the following requirements:

1. Drawings shall be legibly marked to record actual construction.
2. Drawings shall show actual location of all underground and above ground water and wastewater piping and related appurtenances. All changes to piping location including horizontal and vertical locations of utilities and appurtenances shall be clearly shown and referenced to permanent surface improvements. Drawings shall show actual installed pipe material, class,

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etc.

3. Drawings shall clearly show all field changes of dimension and detail.
4. Drawings shall clearly show all details not on the original contract drawings but constructed in the field. All equipment and piping relocation shall be shown.
5. Location of all manholes, hydrants, valves, and valve boxes shall be shown. All valves shall be referenced from at least two and preferably three permanent points.
6. Dimensions between all manholes shall be field verified and shown. The inverts and grade elevations of all manholes shall be shown. Sewer laterals shall be located along the mains measured from the nearest downstream manhole.
7. The depth from finish grade of potable water, reclaimed water, and sewer force mains shall be indicated at all valve locations.
8. If the record drawings have been developed and maintained in a digital format acceptable to the CITY, then one set of 3.5 inch high density diskettes shall also be submitted to the CITY.

Each sheet of the PLANS shall be signed, sealed, and dated by the DEVELOPER's ENGINEER as being "Record Drawings". Construction PLANS simply stamped "Record Drawings" which lack the above requirements or stamped "As-Builts" will not be accepted and shall be returned to the DEVELOPER's ENGINEER. The "Certificate of Completion" will not be issued until correct "Record Drawings" have been submitted.

Copies of all testing results and system clearance documentation from regulatory agencies shall also be submitted to the CITY prior to the issuance of the "Certification of Completion".

### **11.6 LIST OF APPROVED MATERIALS AND PRODUCTS**

A List of Approved Materials and Products for the various products specified in this MANUAL is included in Appendix 'C'. It is the intent of the CITY to review and update Appendix 'C' as appropriate to ensure efficient operation of the services and facilities under the jurisdiction of this MANUAL. For this purpose, the CITY shall evaluate technical submittals from interested manufacturers or suppliers as it deems necessary.

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**11.7 PLACEMENT OF FACILITIES ON CITY OWNED PROPERTY**

All facilities to be owned and maintained by the CITY shall be placed within rights-of-way, easements, or tracts of land dedicated and legally conveyed to the CITY by the DEVELOPER.

**11.8 EASEMENTS ALONG NON-CITY MAINTAINED RIGHTS-OF-WAY**

The DEVELOPER shall convey to the CITY a minimum of a fifteen (15) foot wide Exclusive City Services Easement dedicated to the CITY which is parallel with and next to all adjacent SEMINOLE COUNTY, FDOT, and other non-CITY maintained rights-of-way. Where future dedication of right-of-way is indicated, the Easement shall be placed adjacent to the future right-of-way line.

**11.9 RIGHTS-OF-WAY CORNER CLIPS**

A minimum twenty five (25) foot radius or equal corner clip shall be conveyed to the CITY where all CITY or Non-City rights-of-way lines intersect with each other. This requirement may be accomplished using either an Exclusive City Services Easement or General Warranty Deed, whichever is preferred by the DEVELOPER.