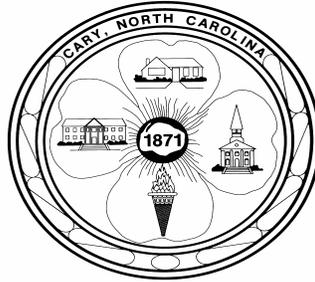


TOWN of CARY



Inspections & Permits Department Irrigation Submittal Information

REQUIREMENTS

In accordance with the standards set forth by the Town of Cary's Community Appearance Manual, the Town of Cary encourages landscapers to use native and drought tolerant plants wherever possible. Where supplemental irrigation is deemed necessary, systems shall be designed and submitted under the guidelines of the Community Appearance Manual, as detailed in the following pages.

www.townofcary.org
Inspections and Permits Department
(919) 469-4340

IRRIGATION SYSTEM DESIGN REQUIREMENTS

All new irrigation systems must adhere to the following design criteria:

- Sprinkler heads must be spaced to provide head to head coverage, using guidelines suggested by the manufacturer, and wind factors must be considered
- Sprays and rotor irrigation heads cannot be used within the same zone, except on single family properties with a single zone system
- To avoid runoff, irrigation systems should be installed so that the precipitation rate is less than the infiltration rate, or a controller must be used which would limit run times to limit runoff
- Sprinklers located on a steep slope require installation of check valves on all the heads on that irrigation zone
- The zoning of the irrigation system must allow that plants with different water requirements (such as grass and shrubs) be on separate zones.
- In addition, the irrigation design should consider the different microclimates found in most landscapes (such as north facing grass areas vs. south facing grass areas) and separate those microclimates into zones. These zoning practices may add slightly to the installation cost of an irrigation system, but can have a dramatic effect on system efficiency.
- The controller should have multiple programs so these different irrigation schedules can be utilized.
- All sprinkler heads as well as drip irrigation emitters should have pressure regulation to optimize system efficiency. This pressure regulation can be at the point of connection to the water supply, at each zone valve or located in each head/emitter.

Guidelines on pressure at the head/emitter

Spray Heads	20 to 35 psi
Gear Rotors	60 psi or less
Impact Rotors	60 psi or less
Drip emitters	40 psi or less

- In order to comply with the Town's Water Waste Ordinance, Chapter 36 / Article 3, Sec.36-83 sprinklers should be chosen to avoid water being sprayed onto impervious surfaces..
- To achieve compliance with Town's Rain Sensor Ordinance, Chapter 36 / Article 3, Sec 36-84, location of rain or soil sensors should be identified, set to ¼ inch and activated. (Do not locate sensors under structural drip lines or within 3' of HVAC equipment, as this can cause inaccurate readings. The sensor location must be readily accessible, without the use of a ladder.)
- No sprays or rotors or bubblers can be placed in the 'devil strip' or area that is less than three feet across. In "devil strips" 3 ft. or greater, sprays or rotors or bubblers can be placed no less than 1.5 ft. from the back of the curb, or where no curb or gutter design exists, heads shall be no less than 3 ft. from the edge of the asphalt. (Irrigation spraying over the sidewalk, to or from the "devil strip" is not allowed except for existing systems designed under previous approved guidelines)

The Town of Cary has developed these standards in conjunction with the Irrigation Association to help preserve and protect our limited natural resources, while at the same time maintaining the high aesthetic level that the community demands. Town staff is available to help ensure that plans are submitted appropriately, and designs are followed through in the field. Additionally, staff is available to serve as a resource to answer any questions. A complete copy of the Community Appearance Manual can be obtained via the Town's web site www.townofcary.org.

PERMIT PROCESS

- **Effective January 1, 2009 an Irrigation Contractors license is required for installations of irrigation systems per N.C. General Statute Chapter 87G. (www.nciclb.org)**
- Complete applications for an irrigation permit must be submitted to the Inspections and Permits Department, located at 316 N. Academy St., Cary, N.C. 27513
- Submit 3 sets of irrigation system plans
- System must be shown on a site plan showing house or building and all right-of-ways and easements.
- Drawings submitted must include a copy of an **approved Town of Cary Utility Site or Subdivision Plan** showing **existing meter tap location** and **meter box location**
- Plans shall not exceed a maximum scale of 1" = 30'
- Plans shall include irrigation designer's name, address and phone number
- Designer must be a current CIA/IA "Certified Irrigation Contractor" (CIC) "Certified Irrigation Designer" (CID), or a Professional Engineer or a Landscape Architect
(Exception: All design requirements on page 1 apply to both commercial and single family irrigation systems. The designer requirement listed above only applies to commercial irrigation systems.)
- Plans must include the following:
 - Location of the water supply (meter, well or on-site pump)
 - Location of all heads, type head, and sprinkler throw pattern and spacing
 - Location of backflow prevention device
 - Location of rain sensor
 - Statement on plans showing precipitation rate is less than infiltration rate, or how you will limit run-off
 - Show check valves on any heads located on steep slopes
 - Show zones for different plant materials that have different water requirements (such as grass & shrubs, north facing vs. south)
 - Label zones by number and identify as grass, shrub or flower bed
 - Show total square footage by zone and for total system
 - Irrigation controller must be shown and capable of multiple programs
 - Show method of pressure regulation
- Other items to be submitted
 - Complete Water Budget form (supplied by Town of Cary)
 - Recommended maintenance schedules for the system
 - Winterization techniques
 - Town of Cary and or other Encroachment Agreements when required
- **Permit issuance is contingent upon application approval and receipt of all applicable potable or reclaimed developmental permitting fees.**

WELL IRRIGATION PERMITTING GUIDELINES

If you would like to install a well for irrigation, several additional steps are needed. The applicant must comply with the standard Irrigation Submittal Requirements as well as the following procedures:

1. Prior to digging a well, you will need to start an application process for a plumbing and electrical permit for a well installation through the Town of Cary's Inspections and Permits Department located in the lower level of Town Hall Building B, 316 N. Academy Street, (919) 469-4340. The application for the well irrigation permit shall set forth such facts as necessary to enable the town to establish and maintain adequate records of groundwater used for irrigation within the town.
2. Once the well permit application process has been started, an application number and a receipt for that permit will be assigned to you. At that point the application number must be presented to the offices of **Wake County's Environmental Services Department at 336 Fayetteville St. Mall (6th floor, room 620)** to apply for a Wake County Well Permit. **(It is recommended that you call 856-7400 in order to get details on specific information that may need to be included.)** For more information visit their website www.co.wake.nc.us/WWDS/.
3. After receiving an approved Wake County Well Permit, you will need to bring that permit and your original information back to the Town of Cary's Inspections and Permits Department to complete your original plumbing and electrical permit application for a well irrigation system.

RAINWATER AND CISTERN IRRIGATION PERMITTING GUIDELINES

If you would like to install a rainwater collection system utilizing a cistern for supplying an irrigation system the following criteria must be met.

- Standard **Irrigation Submittal Requirements** must be followed
- Irrigation System Design Requirements shall also include the location and size of the cistern tank utilized as well as all system safe guards (pumps, check valves and all automatic system switches)
- A separate potable irrigation water meter with an approved backflow prevention device (RPZ) must be incorporated as a secondary backup water source **or**
- If cistern is to be manually filled, an approved backflow prevention device (RPZ) must be added to the residence existing potable water meter to protect the Town of Cary water supply from potential contamination. (standard sewer fees apply to potable meter usage)
- All electrical work associated with the pump system must be included with the permit application

The Town of Cary has developed these standards in conjunction with the Irrigation Association to help preserve and protect our limited natural resources, while at the same time maintaining the high aesthetic level that the community demands. Town staff is available to help ensure that plans are submitted appropriately, and designs are followed through in the field. Additionally, staff is available to serve as a resource to answer any questions. A complete copy of the Community Appearance Manual can be obtained via the Town's web site www.townofcary.org.

INSPECTION PROCESS

(Town of Cary approved irrigation plans must be on site before an inspection may be completed)

Irrigation Systems Utilizing Potable Water

- **Rough-In Inspection***: Once the potable irrigation meter has been installed, the contractor / homeowner is required to call the Inspections and Permits department, (919) 469-4340, to schedule a rough-in inspection. The rough-in inspection will:
 - 1) Inspect the connection at the potable irrigation meter to the water supply
 - 2) Inspect the underground piping connection from the meter box to the backflow (RPZ) before it is covered
 - 3) Inspect the installation of the backflow (RPZ).
 - 4) Collect the backflow (RPZ) certification (Completed by a Town of Cary listed Certified Backflow Prevention Assembly Technician only)

*If the contractor or homeowner does not call in for rough-in inspection within 30 days of the potable irrigation meter being installed, the Town of Cary's Inspections and Permits Department (I & P) will conduct a site visit; if the system is active, a door hanger will be left notifying the property owner that an inspection is required within seven days. If no inspection is scheduled within seven days I & P will lock out the potable irrigation meter until such time that the homeowner or contractor takes the steps necessary to pass the rough-in inspection.

- **Final Inspection****: After the rough-in inspection has been passed and all associated work completed, the contractor / homeowner is required to call the Inspections and Permits department, (919) 469-4340, to schedule a final inspection. The final inspection will:
 - 1) Inspect the location of all heads, type of heads, spacing of heads and throw pattern of each head and correct pressure.
 - 2) Test the system to ensure compliance with approved plans, N.C. State Plumbing Code and Town of Cary Ordinance **or** receive on site a **signed copy** of an **Irrigation Final Inspection Certification**.
 - 3) Ensure the following requirements are met
 - A map of the valve and head layout shall be provided to the property owner or a copy placed near or with the irrigation controller.
 - All zones shall be clearly delineated in the timer cabinet.
 - Responsible entity shall be named on inner door of timer (for emergency contact purposes)
 - 4) Ensure all hose bibs are
 - Above ground only
 - Painted yellow
 - Marked **Non-Potable Water Only**

**If the contractor or homeowner does not call in for a final inspection within 30 days of the rough-in inspection being passed, the Town of Cary's Inspections and Permits Department (I & P) will conduct a site visit; if the system is active a door hanger will be left notifying the property owner that an inspection is required within seven days. If no inspection is scheduled within seven days I & P will turn off and lock out the potable irrigation meter until such time that the homeowner or contractor takes the steps necessary to pass the final inspection.

Future Reclaimed Water Irrigation Systems Utilizing Existing Potable Water

INCLUDES: Areas as defined in the Town's Reclaimed Water System Master Plan (Policy Statement 132) designated to be served in the future by reclaimed water, but that will be temporarily served by either by a standard potable split tap irrigation service or by a Reclaimed Water Main fed by an existing Potable Main

- **Rough-in inspection***: Once the potable meter has been installed, the contractor / homeowner is required to call the Inspections and Permits Department, (919) 469-4340, to schedule an inspection. The rough-in will:
 - 1) Inspect the connection at the reclaimed irrigation meter to the water supply
 - 2) Inspect the complete underground reclaimed irrigation piping system before it is covered to ensure compliance with Town of Cary's Reclaimed Water Standards.
 - 3) Inspect the installation of the backflow (RPZ) (for future reclaimed systems only)
 - 4) Collect the backflow (RPZ) certification (for future reclaimed systems only)
(Completed by a Town of Cary listed certified Backflow Prevention Assembly Technician only)

*If the contractor or homeowner does not call in for rough-in inspection within 30 days of the reclaimed irrigation meter being installed, the Town of Cary's Inspections and Permits Department (I & P) will conduct a site visit; if the meter shows usage and the system is active, a door hanger will be left notifying the property owner that an inspection is required within seven days. If no inspection is scheduled within seven days I & P will turn off and lock out the reclaimed irrigation meter, until such time that the homeowner or contractor takes the steps necessary to pass the rough-in inspection.

- **Final Inspection****: After the rough-in inspection has been passed and all associated work completed, the contractor / homeowner is required to call the Inspections and Permits Department, (919) 469-4340, to schedule an inspection. The final inspection will:
 - 1) Inspect the location and color of all valve boxes, heads, type of heads, spacing of heads and throw pattern of each head and correct pressure
 - 2) Test the system to ensure compliance with approved plans, N.C. State Plumbing Code and Town of Cary Ordinance **or** receive on site a **signed copy** of an **Irrigation Final Inspection Certification**.
 - 3) Ensure In the following additional requirements are met
 - A map of the valve and head layout shall be provided to the property owner or a copy placed near or with the irrigation controller
 - All zones shall be clearly delineated in the timer cabinet
 - Responsible entity shall be named on inner door of timer (for emergency contact purposes)
 - 4) All hose bibs must be
 - Installed below ground in Town of Cary approved reclaimed water hose bib vaults
 - Installed with $\frac{3}{4}$ brass cam lock hose connection per N.C. State Law
 - Lid must be stenciled with the words **Caution Reclaimed Water – Do Not Drink**
(See standard reclaimed hose bib and box detail # 06500.03 @ www.townofcary.org)

**If the contractor or homeowner does not call in for a final inspection within 30 days of the rough-in inspection being passed, the Town of Cary's Inspection and Permits Department (I & P) will conduct a site visit; if the meter shows usage and the system is active, a door hanger will be left notifying the property owner that an inspection is required within seven days. If no inspection is scheduled within seven days I & P will turn off and lock out the reclaimed irrigation meter until such time that the homeowner or contractor takes the steps necessary to pass the final inspection.

Irrigation Systems Utilizing Reclaimed Water

INCLUDES: Areas as defined in the Town's Reclaimed Water System Master Plan that are presently being served by a reclaimed water source

- **Rough-in inspection***: Before the reclaimed meter can be installed, the contractor or homeowner is required to call the Inspections and Permits Department, (919) 469-4340, to schedule an inspection of:
 - 1) The connection of the reclaimed irrigation system to the reclaimed water meter box
 - 2) The complete underground reclaimed irrigation piping system before it is covered to ensure compliance with Town of Cary Reclaimed Water Standards.

After the rough-in inspection has passed the Plumbing Inspector will start the process that will allow the Town of Cary's PWUT Department to set the reclaimed water meter. Once PWUT has verified that the reclaimed water meter box on site is installed per design standards, they will verify the water source and then set the reclaimed water meter. For questions concerning this process please contact PWUT @ (919) 469-4090

*If the contractor or homeowner does not call in for rough-in inspection within 30 days of the reclaimed irrigation permit being issued, the Town of Cary's Inspection and Permits Department (I & P) will conduct a site visit; if the reclaimed meter shows usage and the system is active, a door hanger will be left notifying the property owner that an inspection is required within seven days. If no inspection is scheduled within seven days I & P will turn off and lock out the reclaimed irrigation meter, until such time that the homeowner or contractor takes the steps necessary to pass the rough-in inspection.

- **Final Inspection****: After the rough-in inspection has been passed and all associated work completed, the contractor or homeowner is required to call the inspections and permits department, (919) 469-4340, to schedule an inspection of:
 - 1) Location and color of all valve boxes, heads, type of heads, spacing of heads and throw pattern of each head and correct pressure
 - 2) Testing the system to ensure compliance with approved plans, N.C. State Plumbing Code and Town of Cary Ordinance **or** receive on site a **signed copy** of an **Irrigation Final Inspection Certification**.

This signed certification does not preclude scheduling of the mandatory Reclaimed Water Awareness Training required between the Property Owner and Public Works and Utilities Reclaimed Water Coordinator. In addition, a performance test of the automatic irrigation system will be conducted at the time of the customer awareness training. Please call the Reclaimed Water Coordinator to schedule the required training @ 460-4939.

- 3) In addition the following requirements must be met
 - A map of the valve and head layout shall be provided to the property owner or a copy placed near or with the irrigation controller
 - All zones shall be clearly delineated in the timer cabinet
 - Responsible entity shall be named on inner door of timer (for emergency contact purposes)
- 4) All hose bibs must be
 - Installed below ground in Town of Cary approved reclaimed water hose bib vaults
 - Installed with $\frac{3}{4}$ brass cam lock hose connection per N.C. State Law
 - Lid must be stenciled with the words **Caution Reclaimed Water – Do Not Drink**
(See standard reclaimed water hose bib and box detail # 06500.03 @ www.townofcary.org)

**If the contractor or homeowner does not call in for a final inspection within 30 days of the rough-in inspection being passed, the Town of Cary's Inspection and Permits Department (I & P) will conduct a site visit; if the reclaimed meter shows usage and the system is active, a door hanger will be left notifying the property owner that an inspection is required within seven days. If no inspection is scheduled within seven days I & P will turn off and lock out the reclaimed irrigation meter until such time that the homeowner or contractor takes the steps necessary to pass the final inspection.

Rainwater Cistern Irrigation Systems (Supplemented by Potable Water)

- **Rough-in inspection***: Once the rainwater collection and irrigation system have been installed along with the separate irrigation meter and the backflow protection (RPZ) or with the installation of the backflow protection (RPZ) on the existing potable water meter, the contractor or homeowner is required to call the inspections and permits department, (919) 469-4340, to schedule an inspection of:
 - 1) The connection at the potable irrigation meter to the water supply
 - 2) The underground piping connection from the meter box to the backflow (RPZ) before it is covered
 - 3) The installation of the backflow (RPZ).
 - 4) Collection of the backflow (RPZ) certification (completed by a TOC listed Certified Backflow Prevention Assembly Technician only)
 - 5) The underground piping connection between the potable supply and the irrigation system (downstream of the cistern) including all automated valves
 - 6) Cistern pump set (with check valve) and all associated potentially concealed wiring and circuitry

*If the contractor or homeowner does not call in for rough-in inspection within 30 days of the potable irrigation meter being installed, the Town of Cary's Inspection and Permits Department (I & P) will conduct a site visit; if the meter shows usage and the system is active, a door hanger will be left notifying the property owner that an inspection is required within seven days. If no inspection is scheduled within seven days I & P will lock out the potable irrigation meter until such time that the homeowner or contractor takes the steps necessary to pass the rough-in inspection.

- **Final Inspection****: After the rough-in inspection has been passed and all associated work completed, the contractor or homeowner is required to call the inspections and permits department, (919) 469-4340, to schedule an inspection of:
 - 1) Location of all heads, type of heads, spacing of heads and throw pattern of each head and correct pressure
 - 2) Testing the system to ensure compliance with approved plans, N.C. State Plumbing Code and Town of Cary Ordinance **or** receive on site a **signed copy** of an **Irrigation Final Inspection Certification**.
 - 3) Final inspection of all system wiring and circuit protection
 - 4) In addition, the following requirements must be met
 - A map of the valve and head layout shall be provided to the property owner or a copy placed near or with the timer.
 - All zones shall be clearly delineated in the timer cabinet.
 - Responsible entity shall be named on inner door of timer (for emergency contact purposes).

**If the contractor or homeowner does not call in for a final inspection within 30 days of the rough-in inspection being passed, the Town of Cary's Inspection and Permits Department (I & P) will conduct a site visit; if the meter shows usage and the system is active, a door hanger will be left notifying the property owner that an inspection is required within seven days. If no inspection is scheduled within seven days I & P will turn off and lock out the potable irrigation meter until such time that the homeowner or contractor takes the steps necessary to pass the final inspection.

Irrigation Systems Utilizing Well or Pond Water

- **Rough-in inspection:** Once all permits have been secured and the well dug (or the pond tapped) the contractor or homeowner is required to call the inspections and permits department, (919) 469-4340, to schedule an inspection of:
 - 1) Well pump set (with double check valve) or pond pump set (with dual check valve)
 - 2) All potentially concealed underground wiring and associated circuits

- **Final Inspection:** After the rough-in inspection has passed and the completed irrigation system has been installed, the contractor or homeowner is required to call the inspections and permits department, (919) 469-4340, to schedule an inspection of:
 - 1) Final inspection of all wiring and circuit protection to ensure compliance with National Electrical Code
 - 2) Location of all heads, type of heads, spacing of heads and throw pattern of each head and correct pressure
 - 3) Testing the system to ensure compliance with approved plans, N.C. State Plumbing Code and Town of Cary Ordinance **or** receive on site a **signed copy** of an **Irrigation Final Inspection Certification**.
 - 4) In addition the following requirements must be met
 - A map of the valve and head layout shall be provided to the property owner and a copy placed near or with the timer.
 - All zones shall be clearly delineated in the timer cabinet.
 - Responsible entity shall be named on inner door of timer (for emergency contact purposes).

The Town of Cary has developed these standards in conjunction with the Irrigation Association to help preserve and protect our limited natural resources, while at the same time maintaining the high aesthetic level that the community demands. Town staff is available to help ensure that plans are submitted appropriately, and designs are followed through in the field. Additionally, staff is available to serve as a resource to answer any questions. A complete copy of the Community Appearance Manual can be obtained via the Town's web site www.townofcary.org.

COMMUNITY APPEARANCE MANUAL

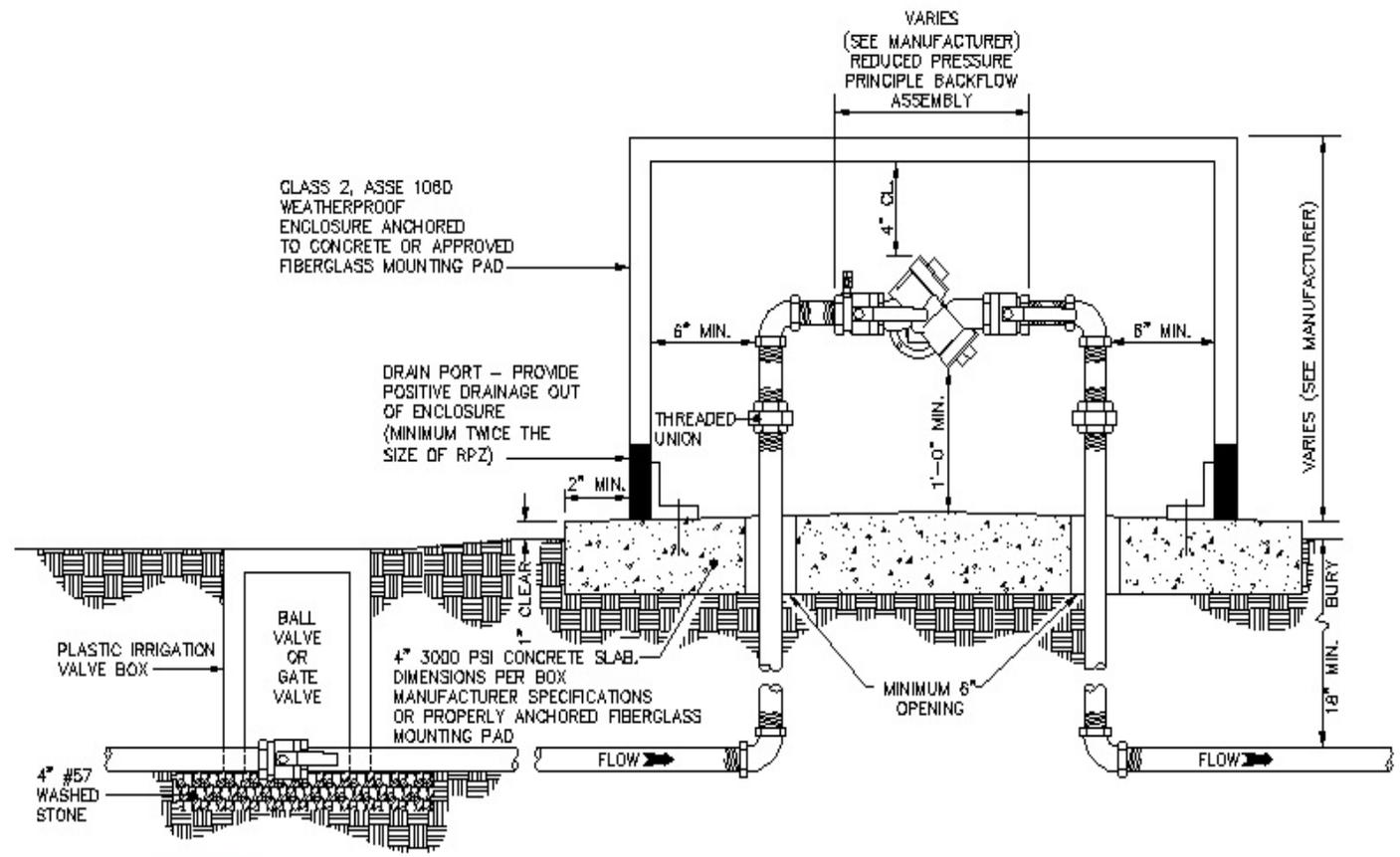
Landscape Section [LAN-3]

- **Definition:** Irrigation systems are those that provide for the application of water to any outdoor planted material by means of a permanent piping system under pressure and that is either manually, semi automatically or automatically scheduled. A new system is any irrigation system or any addition to an existing system that changes the water consumption of the system by 5% or more (a change up or down in total system consumption).
- **Applicability:** These standards and specifications apply to all irrigation systems used in commercial, multifamily, single family, industrial, municipal, and streetscapes in The Town of Cary. They address the design requirements, materials, installation and inspections of such systems. Commercial Irrigation systems should be designed by a person having a current CIA/IA "Certified Irrigation Contractor" (CIC), Certified Irrigation Designer" (CID) status or a professional Engineer or a Landscape Architect

The design requirements apply to single family residential lots; however there is no requirement that the system be designed and submitted by a professional.

REQUIRED SUBMISSIONS

- Scaled drawing (maximum scale of 1"=30'), recommend scale (1"=20').
- Designer's name, address and phone number on the plan.
- Identify Water Supply Source and location (Potable, Reclaim, Future Reclaim, Private Well, Cistern, Pond) If uncertain of Water Supply Source please contact your Builder / Developer
 - Meter size
 - Static pressure reading before reduction
 - On-site pump location (where applicable).
- Backflow prevention device
 - Location
 - 5 ft of meter / for any other location prior approval required by Bobby Fann, the Town of Cary Water Distribution System Operator, (919) 319-4545
 - Size
 - Winterization techniques to be used
- All irrigation components shall be clearly shown
 - Main cut off, located behind the meter and before the PRV
 - Pipe layout, line size and material
 - Valve location and size and type
 - Sprinkler head location
 - The sprinkler throw pattern of each head (to scale)
 - Irrigation controller (location and model)
 - Include gallons per minute and square feet per zone
- Heads must be spaced to provide head to head coverage.
- Irrigation zones shall be labeled by number and identified as turf, shrub, or flower head.
- Total square footage of irrigated area of each type of zone shall be clearly indicated on the plan and on the water budget form.
- A completed Water Budget Form supplied by the town of Cary.
- An irrigation schedule for April through October (run times per cycle, cycles per day, and days per week for each station).
- Recommended maintenance schedules for the system.



NOTES:

- 1) REDUCED PRESSURE PRINCIPLE BACKFLOW PREVENTION ASSEMBLY SHALL COMPLY WITH ASSE 1013 & AWWA C511.
- 2) BACKFLOW PREVENTION ASSEMBLY SHALL BE INSTALLED WITHIN 5-FT OF THE IRRIGATION METER.
- 3) BACKFLOW ASSEMBLY SHALL BE CENTERED ON CONCRETE OR OTHER APPROVED MOUNTING PAD AND CENTERED WITHIN ENCLOSURE.
- 4) MINIMUM NON-HEATED, INSULATED CLASS II, ASSE 1060 WEATHERPROOF ENCLOSURE REQUIRED.
- 5) PIPE MATERIAL SHALL BE PVC (SCH. 80 OR BETTER), COPPER (TYPE K) OR BRASS (ASTM B43).
- 6) IRRIGATION ASSEMBLIES TO BE DRAINED DURING WINTER MONTHS BY PROPERTY OWNER.
- 7) INSTALLATION SHALL BE IN COMPLIANCE WITH ALL APPLICABLE TOWN ORDINANCES AND SPECIFICATIONS IN ADDITION TO THE NC PLUMBING CODE.
- 8) PROPERTY OWNER SHALL BE RESPONSIBLE FOR MAINTENANCE AND OPERATION OF BACKFLOW PREVENTION ASSEMBLY AND COMPLIANCE WITH REPORTING AND TESTING REQUIREMENTS.



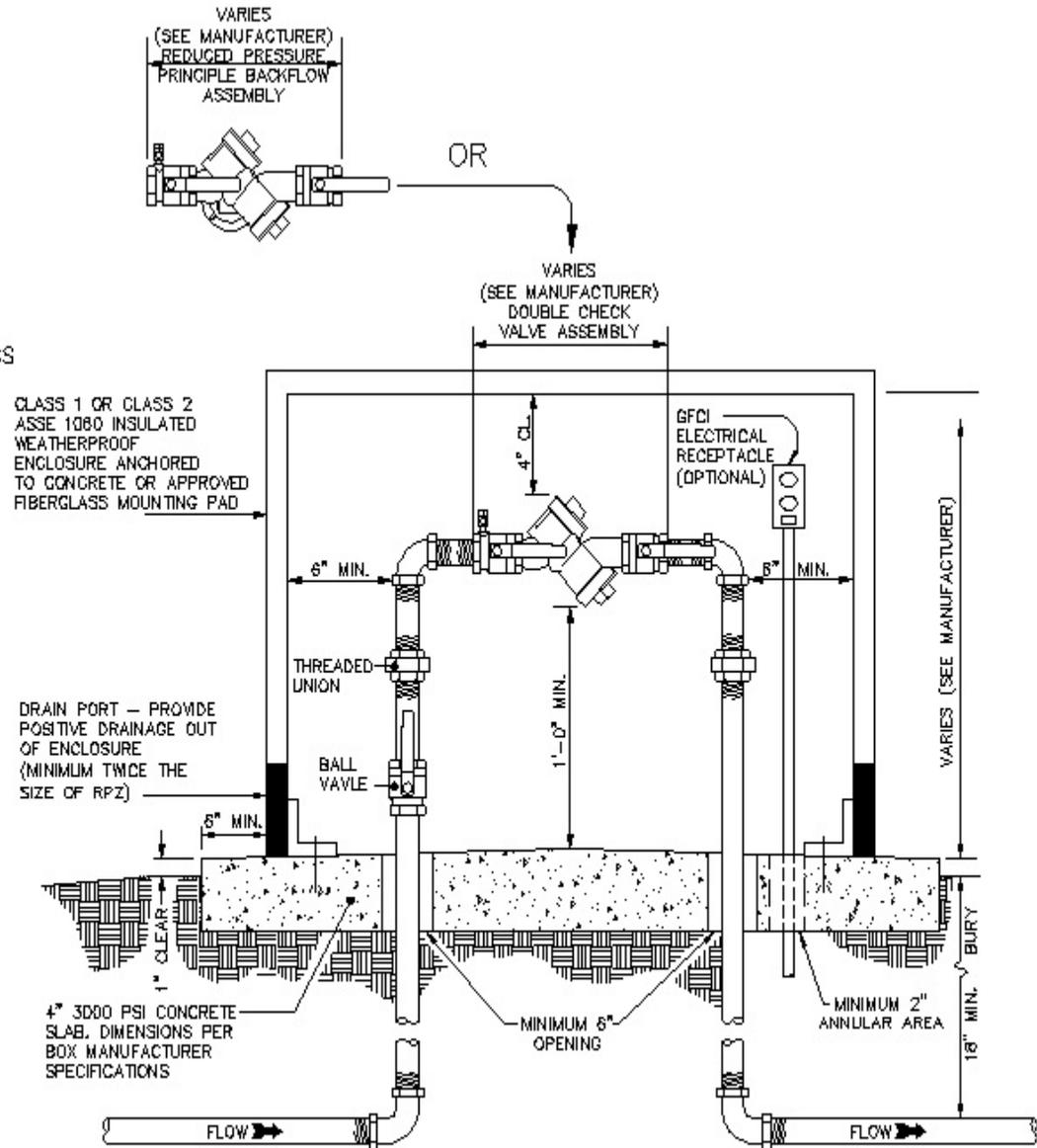
EFFECTIVE: 09/08/05

STANDARD 3/4" to 1" RESIDENTIAL IRRIGATION BACKFLOW ASSEMBLY

DETAIL No.
06200.02
SHEET 1 OF 1

NOTES:

- 1) REDUCED PRESSURE PRINCIPLE BACKFLOW PREVENTION ASSEMBLY SHALL COMPLY WITH ASSE 1013 & AWWA C511.
- 2) DOUBLE CHECK BACKFLOW PREVENTION ASSEMBLY SHALL COMPLY WITH ASSE 1015 & AWWA C510.
- 3) BACKFLOW PREVENTION ASSEMBLY SHALL BE INSTALLED WITHIN 5-FT OF THE METER BOX.
- 4) BACKFLOW PREVENTION ASSEMBLY SHALL BE CENTERED ON CONCRETE OR APPROVED FIBERGLASS MOUNTING PAD AND CENTERED WITHIN ENCLOSURE.
- 5) MINIMUM INSULATED CLASS I OR CLASS II, ASSE 1060 WEATHERPROOF ENCLOSURE REQUIRED (HEATING OPTIONAL).
- 6) OPTIONAL 120V GFCI ELECTRICAL RECEPTACLE TO BE INSTALLED IN ACCORDANCE WITH THE NC ELECTRICAL CODE FOR OUTDOOR OPERATION.
- 7) PIPE MATERIAL SHALL BE PVC (SCH. 80 OR BETTER), COPPER (TYPE K) OR BRASS (ASTM B43).
- 8) INSTALLATION SHALL BE IN COMPLIANCE WITH ALL APPLICABLE TOWN ORDINANCES AND SPECIFICATIONS IN ADDITION TO THE NC PLUMBING CODE.
- 9) PROPERTY OWNER SHALL BE RESPONSIBLE FOR MAINTENANCE AND OPERATION OF BACKFLOW ASSEMBLY AND COMPLIANCE WITH REPORTING AND TESTING REQUIREMENTS.



EFFECTIVE: 09/08/05

STANDARD 3/4" to 2" COMMERCIAL OUTDOOR BACKFLOW ASSEMBLY

DETAIL No.

06200.03

SHEET 1 OF 1

LANDSCAPE WATER BUDGET CALCULATION

Application date: _____ Irrigation contractor name: _____
 Permit number: _____ Irrigation contractor telephone number: (____) _____
 Service address: _____ Irrigation contractor fax number: (____) _____
 Irrigated landscaped: _____ (sq.ft.) *Email address: _____
 To keep your company informed, would you like to be included on the Town's irrigation contractor fax distribution list? **YES** **NO** Company Web site: _____

To determine approximate water needs for the property identified above, measure the irrigated area in square feet and multiply by the conversion factor for the applicable month. This formula calculates all water requirements as if turf were being irrigated throughout the site, giving the area its maximum allocation. Official notification of water allocations will be sent to the customer, pending review by Town staff. Call 469-4090 for more information.

MONTH	CONVERSION FACTOR	X LANDSCAPED AREA (FT ²)	= WATER BUDGET (GALLONS/MONTH)
March	0.82		
April	1.53		
May	1.57		
June	2.21		
July	2.30		
August	1.77		
September	1.25		
October	0.45		

January, February, November, and December irrigation system should be winterized

Water Budget per month = Landscaped Area x Evapotranspiration Rate x Crop Coefficient x Conversion Factor x Irrigation Efficiency – Effective Rainfall

Landscaped area = Area measured in square feet

Evapotranspiration Rate = Rate in which water is used to grow plants and crops. This term comes from evaporation (water loss by soil), and transpiration (water loss by plants).

Crop Coefficient = Factor used to adjust the Evapotranspiration Rate to a specific crop type, a coefficient of 0.7 is used to promote warm season turf.

Conversion Factor = Factor to convert cubic feet into gallons (7.48)

Irrigation Efficiency = Factor used to adjust for the inability of an irrigation system to distribute water evenly over the area being measured. The minimum industry standard of 62.5% was used for this calculation.

Effective Rainfall = The amount of rainfall that is available to be used by plants. (60% of total rainfall)

Please list the number of zones and type of sprinkler heads per zone in the chart below

	ROTOR	SPRAY	DRIP
Number of Zones			

CROSS CONNECTION CONTROL & BACKFLOW PREVENTION DEVICE TEST AND MAINTENANCE REPORT

CUSTOMER: _____

STREET ADDRESS: _____

LOCATION OF ASSEMBLY: _____

TYPE OF ASSEMBLY: RP DC PVB SIZE _____

MANUFACTURER: _____ MODEL: _____ SERIAL NO. _____

RELIEF VALVE	CHECK VALVE #1	CHECK VALVE #2	PRESSURE VACUUM BREAKER
OPENED AT _____ . _____ PSID BUFFER _____ PSID DID NOT OPEN <input type="checkbox"/>	<input type="checkbox"/> LEAKED <input type="checkbox"/> CLOSED TIGHT DIFF. PRESSURE ACROSS CHECK VALVE _____ . _____ PSID	<input type="checkbox"/> LEAKED <input type="checkbox"/> CLOSED TIGHT DIFF. PRESSURE ACROSS CHECK VALVE _____ . _____ PSID	AIR INLET OPENED AT _____ . _____ PSID DID NOT OPEN <input type="checkbox"/> CHECK VALVE: LEAKED <input type="checkbox"/> HELD AT _____ . _____ PSID
<input type="checkbox"/> CLEANED ONLY REPLACED: RUBBER KIT <input type="checkbox"/> RV ASSEMBLY <input type="checkbox"/>	<input type="checkbox"/> CLEANED ONLY REPLACED: RUBBER KIT <input type="checkbox"/> CV ASSEMBLY <input type="checkbox"/>	<input type="checkbox"/> CLEANED ONLY REPLACED: RUBBER KIT <input type="checkbox"/> CV ASSEMBLY <input type="checkbox"/>	<input type="checkbox"/> CLEANED ONLY REPLACED: RUBBER KIT <input type="checkbox"/> CV ASSEMBLY <input type="checkbox"/>
OPENED AT _____ . _____ PSID	<input type="checkbox"/> CLOSED TIGHT _____ . _____ PSID	<input type="checkbox"/> CLOSED TIGHT _____ . _____ PSID	AIR INLET _____ . _____ PSID CHECK VALVE _____ . _____ PSID
INITIAL TEST: SHUT OFF VALVE #2 <input type="checkbox"/> LEAKED <input type="checkbox"/> CLOSED TIGHT		FINAL TEST: SHUT OFF VALVE #2 <input type="checkbox"/> LEAKED <input type="checkbox"/> CLOSED TIGHT	

NOTE: Each customer must send a copy of the certified record for each test or repair to the town within 30 days after the completion of each test or repair.

REMARKS: _____

I HEREBY CERTIFY THAT THIS DATA IS ACCURATE AND REFLECTS THE PROPER OPERATION AND MAINTENANCE OF THE ASSEMBLY.

INITIAL TEST BY: _____ CERTIFIED TESTER NO.: _____ DATE: _____

REPAIRED BY: _____ DATE: _____

FINAL TEST BY: _____ CERTIFIED TESTER NO.: _____ DATE: _____

DOMESTIC FIRE LAWN IRRIGATION NEW TEST RECERTIFICATION TEST

WATER METER NUMBER: _____ PLUMBING PERMIT NUMBER: _____

TEST KIT: DIFFERENTIAL DUPLEX ELECTRONIC LINE PRESSURE _____ PSI

TIME OF DAY _____ AM PM SIGNATURE OF TESTER _____

Testing Gauge Serial # _____ Model Number _____ Calibration Date: _____

RETURN TO: Town of Cary, Cross Connection Control ORC
P.O. Box 8005, Cary, NC 27512-8005

PHONE: (919) 469-4090
FAX: (919) 469-4304

RESIDENTIAL RPZ WINTERIZATION NOTIFICATION AND WAIVER

NOTIFICATION

This document serves to notify you that the RPZ (backflow preventer), which connects your irrigation system to the Town of Cary water meter, must be disconnected and placed in a protected place to prevent freezing (winterized). This is done by turning the ball valve, located near the RPZ, in a clockwise direction to turn off water to your system. Next, the RPZ needs to be removed by unscrewing the unions on the risers (pipes extending out from the ground). Pay careful attention to the two O-rings (located within the unions), so they are not misplaced when unions are removed.

NOTE: A cover placed on the open risers following winterization will prevent debris from getting into the system and causing the valves to stick in the open position at Spring start-up. The RPZ will need to be re-certified at the time the unit is re-installed.

WAIVER

This certifies that I, _____

@ _____

(address)

have read the above notification and acknowledge that the above instructions for removal of the RPZ are mere suggestions for such and understand that it is my responsibility to properly winterize or have someone winterize the RPZ connected to the irrigation system. I release The Town of Cary from all responsibility of any damages or water loss that may occur due to improper winterization.

Signature: _____

Date: _____



2010 IRRIGATION REMINDERS

1. Need a 45-day exception permit to the watering schedule?

Apply online at www.townofcary.org

Experts recommend three weeks of daily watering to establish new seed or sod, but 45 days is permitted to account for inclement weather and delivery delays.



- New construction permits are given throughout the year
- For established properties w/fescue, permits are issued Sept. 15-Nov. 15
- For established properties w/warm season grass, permits are issued April 15-Aug. 15

2. What's the Alternate Day Watering Schedule?

	M	Tu	W	Th	F	Sa	Su
Odd Addresses	NO	Yes	NO	Yes	NO	Yes	NO
Even Addresses	NO	NO	Yes	NO	Yes	NO	Yes
Hand watering and drip irrigation are allowed any day of the week							

3. How can I irrigate in the “devil strip”?

No sprays or rotors or bubblers can be placed in the “devil strip” or area that is less than 3 feet across. In “devil strips” 3 ft. or greater, sprays or rotors or bubblers can be placed no less than 1.5 ft. from the back of the curb, or where no curb or gutter design exists, heads shall be no less than 3 ft. from the edge of the asphalt. (Irrigation spraying over the sidewalk, to or from the “devil strip” is not allowed except for existing systems designed under previously approved guidelines.)

IRRIGATION FINAL INSPECTION CERTIFICATION

I do hereby submit this certification confirming that the Irrigation System located at _____ has been installed, field tested on _____ and confirmed to have met at a minimum the Town of Cary Ordinances and Irrigation Design Standards as witnessed by my signature and the property owner's signature.

- Potable irrigation design criteria submitted and approved under Permit # _____

OR

- Reclaimed irrigation design criteria submitted and approved under Permit # _____

Irrigation Company and Company Address

Contractor's Signature and License Number

Date

Property Owner's Signature

Date