21NCAC 23 .0104 is re-adopted with substantive changes as published in 30:03 NCR 297 as follows:

21 NCAC 23 .0104 CONTINUING EDUCATION

(a) Continuing Education (CEU) credit shall not be obtained for the same course more frequently than every three years.

(b) Each individual licensee must earn ten hours of approved continuing education each calendar year. The 10 hours shall include at least two but not more than four hours of business education. The remaining hours of continuing education shall consist of training in landscape and turf irrigation technology.

~~(c) A licensed contractor may carry forward from the year earned to the following year up to 10 hours of continuing education.~~

~~(d)~~ (c) A licensed contractor shall provide proof of attendance for all continuing education upon request by the Board.

~~(e)~~ (d) Only continuing education classes or activities that have been approved by the Board as ~~meeting the requirements of this Rule~~ providing adequate education regarding the requirements of this Chapter satisfy the licensee's continuing education requirement.

History Note: *Authority G.S. 89G-5; 89G-9;*
Eff. July 1, 2011.
Readopted Eff. January 1, 2016

21 NCAC 23 .0206 is re-adopted with substantive changes as published in 30:03 NCR 297 as follows:

21 NCAC 23 .0206 CONDUCT OF HEARING

(a) Hearings in contested cases shall be conducted by a majority of the Board or referred to the Office of Administrative Hearings pursuant to G.S. 150B-40(e).

(b) Disqualification. An affidavit seeking disqualification of any Board member, if timely filed in good ~~faith~~ faith, shall be ruled on by the remaining members of the Board. An affidavit is considered timely if it is filed:

(1) Prior to the hearing; or

(2) As soon after the commencement of the hearing as the affiant becomes aware of facts which give rise to his or her belief that a Board member should be disqualified.

(c) Evidence. The admission of evidence in a hearing in a contested case shall be as prescribed in G.S. 150B-41.

History Note: *Authority G.S. 89G-5; 150B-38; 150B-40; 150B-41;*
Eff. July 1, 2011;
Amended Eff. April 1, 2015.
Readopted Eff. January 1, 2016

21 NCAC 23 .0207 is re-adopted without substantive changes as published in 30:03 NCR 297 as follows:

21 NCAC 23 .0207 DECISION OF BOARD

(a) The form and content of the Board's decision in a contested case shall be as prescribed by G.S. 150B-42(a), and its decision shall be served upon the parties in a manner consistent with that statute.

(b) At the conclusion of the hearing and deliberations, the Board shall announce its findings of fact and conclusions of law. If the Board concludes that the hearing respondent has violated a provision of the rules in this Chapter or of G.S. 89G, it shall announce the nature and extent of any sanction it orders be imposed upon the hearing respondent. The Board shall then direct its legal counsel, the respondent's counsel, if represented, or such independent legal counsel as may be provided by the North Carolina Department of Justice for the purpose of advising the Board in the course of that hearing, to draft a proposed order consistent with its announcement. The order shall be drafted in accordance with G.S. 150B-42.

(c) The official record of the hearing in a contested case shall contain those items specified in G.S. 150B-42(b).

History Note: *Authority G.S. 89G-5; 150B-38;150B-42;*
Eff. July 1, 2011;
Amended Eff. April 1, 2015.
Readopted Eff. January 1, 2016

21 NCAC 23 .0406 is re-adopted with substantive changes as published in 30:03 NCR 297 as follows:

21 NCAC 23 .0406 COMPONENTS AND ZONE DESIGN

(a) An irrigation contractor shall design the layout of heads and other emission devices to reduce evaporation loss, reduce surface ~~run-off~~ run-off, and limit overspray across or onto a street, public driveway or sidewalk, parking area, building, fence, or adjoining property.

(b) When changes are required an irrigation contractor shall specify in the plan notes that any required equipment shall meet or exceed the design standards of the system.

(c) An irrigation contractor shall design sprinkler head spacing with an approximate "head-to-head" coverage, unless the coverage is designed for wind derating. Wind derating shall be based on wind criteria for the time period that the system is normally operated.

(d) An irrigation contractor shall use separate ~~station/zones~~ stations or zones (hydrozones) for areas with dissimilar environmental conditions or dissimilar water or scheduling requirements. These conditions or requirements include sun exposure, plant type, soil type, varying wind conditions, grades, and dimensional issues. When not practicable due to accessibility, dimensional issues or other constraints, practical modifications to this standard ~~are~~ may be acceptable.

(e) An irrigation contractor shall, when selecting system components:

(1) Select components to avoid surface runoff;

(2) Select components to keep the sprinkler precipitation rate below the infiltration rate of the soil;

(3) Specify the use of repeat cycles to allow the water to soak into the root zone; and

(4) Specify stations or zones for sprinklers at the top and toe of sloped areas.

(f) An irrigation contractor shall locate sprinkler heads based on an evaluation of physical, environmental, and hydraulic site conditions, including typical wind conditions during the normal irrigation period.

(g) An irrigation contractor shall divide the irrigation systems into zones consistent with the types of sprinkler heads and nozzles being used in order to achieve an approximate matched precipitation rate.

(h) An irrigation contractor shall utilize water-conserving equipment as follows:

(1) Check valves to minimize low-head drainage when grades exceed five percent;

(2) Pressure regulators or pressure compensating devices when pressures exceed manufacturer's recommendations;

(3) Rain sensors to suspend irrigation during rain or other forms of precipitation;

(4) A controller that has multi-program capability with at least four start times (for multiple repeat soak cycles) and run time adjustments in one-minute increments; and

(5) Low-trajectory sprinkler nozzles and modified head spacings to mitigate the effects of wind.

(i) An irrigation contractor shall select components that do not mist when manufacturer's pressure specifications are met.

(j) An irrigation contractor shall design irrigation systems ~~having~~ with control wire splices made with a waterproof wire splice kit that is UL listed for underground applications. The design shall specify the manufacturer's recommended splice kits for two-wire control systems.

(k) An irrigation contractor shall offset turf grass sprinklers from pavement edges a minimum of two inches to allow for edging of the turf.

(l) An irrigation contractor shall offset sprinklers from vertical walls to limit spray on the walls.

(m) An irrigation contractor shall locate valves to allow reasonable access for maintenance or service. ~~so as not to be visually intrusive while being easy to locate.~~

(n) An irrigation contractor shall protect the roots of existing trees by:

(1) Planning pipe system layout to limit its effect on existing trees and other planting.

(2) When necessary to trench into the root zone of an established plant in order to provide irrigation within the root zone:

(a) digging the trench in such a way as to minimize the effect on the roots (for example, by digging the trench in a straight line towards the base of the tree or shrub such that, if the line of the trench were extended, it would intersect with the base of the tree or shrub); or

(b) using direct boring or hand-trenching. An irrigation contractor shall use hand trenching techniques that dig a trench without damaging roots having a diameter of one-half inch or more.

~~(2)~~ (3) In the event of trenching, ~~Maintaining~~ maintaining a distance of one foot from the tree trunk ~~between trenches and tree trunks~~ for every inch of tree diameter at a height of four feet six inches above the ~~ground,~~ ground. ~~maintain a distance of one foot between pipes and the tree trunk.~~ For example, piping shall be kept at least 20 feet away from the trunk of a tree having a 20 inch diameter at four feet six inches above the ground.

~~(3)~~ (4) In the event of boring, maintaining a distance of at least one-half foot from the tree trunk for each inch of tree diameter at a height of four feet six inches above the ground and, in any event, maintaining a distance of at least five feet from the tree trunk. When direct boring, an irrigation contractor shall bore to a minimum of 36 inches. ~~Using direct boring or hand-trenching where it is necessary to trench in the root protection zone. If possible an irrigation contractor shall dig trenches in a line perpendicular to the tree trunk, but maintain a distance from the trunk that is at least one-half feet for each inch of tree diameter at a height of four feet six inches above the ground. When direct boring, an irrigation contractor shall bore to a minimum of 36 inches. An irrigation contractor shall not bore within five feet of a tree trunk. An irrigation contractor shall use hand trenching techniques that dig a trench without damaging roots having a diameter of one-half inch or more.~~

~~(4)~~ (5) Avoiding placing sprinklers in a position to directly spray water on tree trunks of mature trees by placing them no closer to a tree than one-third of the sprinkler spray radius.

(o) An irrigation contractor shall use the appropriate size American Wire Gauge ("AWG") wire, as noted by the manufacturer, to operate a valve.

(p) An irrigation contractor shall:

(1) ~~Place~~ Install control wires in the same trench along the ~~same line~~ side of the main line piping; ~~and along side of the main line;~~

(2) Allow slack in the wiring; and

(3) Bundle an expansion coil for all wires at each valve location.

(q) An irrigation contractor shall indicate common wiring (wire that runs through the entire circuit of valves) by using a different colored wire from all other wire connections.

(r) An irrigation contractor shall provide additional wire along the irrigation wire path for future expansion or replacement of damaged wires.

(s) An irrigation contractor shall use valve boxes that are large enough to provide sufficient space for servicing the valve housed inside. ~~to allow for easy maintenance of the valve housed inside.~~ Valve boxes shall be at least 10 inches in diameter for both manual and automatic valves.

(t) An irrigation contractor shall follow the manufacturer's recommendation for all wiring and grounding, including two-wire control systems.

History Note: *Authority G.S. 89G-5;*
Eff. August 1, 2011.
Readopted Eff. January 1, 2016

21 NCAC 23 .0505 is re-adopted with substantive changes as published in 30:03 NCR 297 as follows:

21 NCAC 23 .0505 TRENCHING AND PIPING

(a) All portions of an irrigation system that do not meet the standards in this Rule shall be noted on the record drawing.

(b) An irrigation contractor shall protect the root systems of the trees on the site by not trenching across the established root systems of existing trees and shrubs.

(c) Notwithstanding the requirement in Paragraph (b) of this Rule, ~~When~~ when the irrigation contractor finds that it is necessary to trench into the root zone of an established plant in order to provide irrigation within the root zone, ~~trenching shall be done so that the trench is at a right angle to the base of the tree or shrub~~ he shall dig the trench in such a way as to minimize the effect on the roots (for example, by digging the trench in a straight line towards the base of the tree or shrub such that, if the line of the trench were extended, it would intersect with the base of the tree or shrub).

(d) An irrigation contractor shall cut damaged roots cleanly at right angles.

(e) Piping in irrigation systems shall be designed and installed so that the flow of water in the pipe will not exceed a velocity of five feet per second for polyvinyl chloride (PVC), polyethylene (PE), and high density polyethylene (HDPE) pipe and seven feet per second for metal pipe.

(f) The main line and lateral line piping shall be installed to provide a minimum of 12 inches between the top of the pipe and the natural grade.

(g) The bottom of the trench shall be smooth and provide a flat bed on which to rest the pipe.

(h) The irrigation contractor shall clean backfill material of any debris that may damage the pipe.

(i) If a utility, man-made ~~structure~~ structure, or roots create an unavoidable obstacle that makes the 12 inch depth coverage requirement impractical, the piping shall be installed inside a larger section of pipe for added protection.

(j) When swing joints are used, the depth of the pipe shall allow the swing joint to operate as designed.

(k) All trenches and holes created during installation of an irrigation system shall be backfilled and compacted to the final grade. The trench shall be compacted in lifts no greater than six inches to insure proper compaction.

(l) All new irrigation systems that are installed using PVC shall be prepared according to manufacturer's recommendations prior to connection.

(m) When the irrigation contractor uses PR 200 pipe, the manufacturer's directions shall be followed.

(n) The irrigation contractor shall use the manufacturer's approved lubricant when assembling Bell and Gasket Pipe and Fittings.

(o) The irrigation contractor shall use Teflon tape on all threaded fittings, wrapping the tape three times to insure a proper seal.

(p) When the irrigation system uses reclaimed water, the irrigation contractor shall use purple pipe or mark the pipe with purple tape placed above all piping in the system. Tape shall be within six inches of the top of the pipe. The irrigation contractor shall use purple valve box covers and purple quick coupler flaps and place an eight inch by

eight inch sign with purple background stating "RECLAIMED WATER-DO NOT DRINK," and "AGUA DE RECUPERION-NO BEBER."

History Note: *Authority G.S. 89G-5(15); 89G-5(16);*
Eff. July 1, 2011;
Amended Eff. April 1, 2015.
Readopted Eff. January 1, 2016