

LANDSCAPE GENERAL SPECIFICATIONS

Install landscaping in accordance with all applicable codes regarding materials, methods of work and disposal of waste material. Obtain and pay for all required permits and inspections.

Visit the site and examine the conditions under which the work is to be performed. Do not proceed with the work until all unsatisfactory conditions have been rectified.

Locate and protect all existing underground and overhead utilities, benchmarks, control points and monuments within the work area. Repair made do to damage to any of these items will be made at the contractor's expense. If incorrectly located utilities are encountered, contact the applicable utility company to receive any further instructions or assistance that may be needed.

Take all measures necessary to protect all existing paving, buildings, utilities, etc. on and adjacent to the site. Repair made do to damage to any of these items will be made at the landscape contractor's expense.

It is the responsibility of the contractor to satisfy themselves as to the accuracy of the quantities on the plan. If there are any discrepancies between the plan and the material list this should be addressed prior to bidding and beginning work. In any instance that a discrepancy does occur between the plan and material list, the plan rules. No extra compensation will be allowed on account of discrepancies between the plan and material list.

It is the responsibility of the landscape contractor to review the irrigation plan to assure that the irrigation design is adequate for warranty purposes. If there are any concerns, this should be addressed prior to bidding and beginning work. If no concerns are acknowledged, it is assumed that the irrigation system is adequate and the warranty herein is in full effect.

Square foot, cubic yard and lineal foot quantities do not account for any waste and it is the contractor's responsibility to calculate any extra material necessary to offset this.

It is the responsibility of the contractor to order or provide all material, equipment, labor, etc. necessary to complete the work according to the plans and specifications.

All existing invasive plant materials are to be removed as per applicable code.

The landscape designer has the final say in any and all disputes regarding layout, performance, material, quality, size, grading, etc. The contractor shall take corrective action based on the landscape designer's instructions. Any corrective action made due to any of these items will be made at the landscape contractor's expense.

Warranty all palms, trees and plant materials to remain alive and in healthy condition for a period of one year after acceptance. Plants must be given proper care during this time. This includes maintenance, fertilizing, spraying, and being provided with adequate irrigation as necessary. Replace each palm, tree or plant that is dead or in severely unhealthy condition once within the warranty period of one year. The warranty becomes void in cases of vandalism, fire, flood, freezing or extreme cold not typical for the area, lightening strikes, hurricane force wind, improperly functioning or turned off irrigation or owner negligence. Any replacement desired or required do to any of these unwarranted causes will be at the owner's expense.

LANDSCAPE INSTALLATION SPECIFICATIONS

Treat all areas to receive landscaping with a broad-spectrum herbicide and allow enough time for the herbicide to take full effect prior to beginning any landscape installation.

Treat all landscaping beds with a pre-emergent herbicide prior to beginning any landscape installation.

The landscape contractor shall make sure that all planting beds are free from rocks, trash, waste material and other construction debris prior to landscape installation and shall notify the owner prior to installation so that they may have the site contractor remove their waste.

Install all palms, trees and plant materials in the locations and at the quantity specified on the landscape plans. The owner or their representative must approve any deviations from the landscape plans in advance.

All palms, trees and plant materials shall be planted as per the details shown on the landscape plans. The planting pit shall be twice the diameter of the root ball or pot and shall be backfilled with planting soil and watered in thoroughly.

All palms and trees shall be fertilized using a full spectrum slow release fertilizer according to the manufacturer's recommendations to quantity per tree according to tree size. All plant materials shall be fertilized at the time of installation with a full spectrum slow release fertilizer according to the manufacturer's recommendations.

All burlap, grow bags, wire cages, etc. shall be removed from the root ball of all palms and trees prior to planting.

Stake and guy all palms and trees to ensure they remain in their proper growing positions. All staking and guying should be well marked to prevent tripping hazards or other possible injuries. Staking and guying shall not permit nails, screws, wire, and etc. to penetrate the outer surface of the palm or tree. Any palms or trees damaged due to such practice shall be replaced at the landscape contractor's expense.

All planting areas shall have 3" of grade "A" brown mulch and all palms and trees not located within a planting area shall have a ring of mulch around the base a minimum of 24" in diameter and 3" deep.

Prepare all areas to receive sod to be smooth, free from trash and debris and free draining. Site contractor shall leave the grade + or - 1". Install the sod to form a solid mass with tightly fitting joints that are staggered with each additional course. Tamp or roll the sod once laid to ensure contact with the soil. Sod should be flush with sidewalks, curbs and all other adjacent surfaces. Water the sod thoroughly immediately after installation.

Adhere to all federal, state and local laws regarding the handling and application of herbicides and fertilizers. Follow manufacturer's recommendations regarding mixing ratio and application rate of herbicide.

LANDSCAPE MATERIAL SPECIFICATIONS

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All palms, trees and plant materials are to be Florida #1 or better as described in the latest edition of Grades and Standards for Nursery Plants published by the State of Florida Department of Agriculture and Consumer Services.

All palms, trees and plant materials shall be the variety specified in the material list for the landscape plans. All palms, trees and plant materials are to be referred to, ordered and planted according to the "scientific" or "botanical" name. Any errors made when referring to, ordering or planting any material by the "common" name will be corrected at the landscape contractor's expense.

All palms, trees and plant materials are to meet the minimum measurements for each category shown in the material list for the landscape plans regarding height, caliper, spread and container size. In some instances a measurement in one category may need to increase to meet the minimum measurement for another category. This shall be verified prior to beginning work and any necessary increase in size from what is shown in the material list shall be made to meet all minimum measurements for each category. No extra compensation will be allowed to increase one category of measure to meet the minimum measurement of another category once the job has been contracted or has commenced.

The sod shall be of the variety specified in the material list for the landscape plans. All sod should be healthy, well rooted and uniform in both color and density. It shall be free from pests, disease and weeds. All sod shall be delivered on pallets in the square footage typical per pallet with regard to the variety of sod specified. The landscape contractor shall field verify all quantities prior to ordering.

Mulch shall be brown and of the quantity specified in the material list for the landscape plans. This quantity is based on coverage 3" in depth in all planting areas and a 24" ring 3" in depth around all trees located in lawn areas. The landscape contractor shall verify all quantities of mulch on the plan. No extras compensation will be allowed to increase the quantity of mulch to attain a 3" depth once the job has been contracted or has commenced. Mulch shall be grade "A" if not otherwise specified in the material list.

C L O U S E R

LANDSCAPE ARCHITECTURE
AND IRRIGATION DESIGN

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LANDSCAPE PLAN
HIGHLANDS REG. RETENTION PARK
3600 SOUTH HIGHLANDS AVE. SEBRING, FL 33870
FOR
HIGHLANDS COUNTY BOARD OF
COUNTY COMMISSIONERS

DATE

03-22-2018

REVISIONS
DESCRIPTION

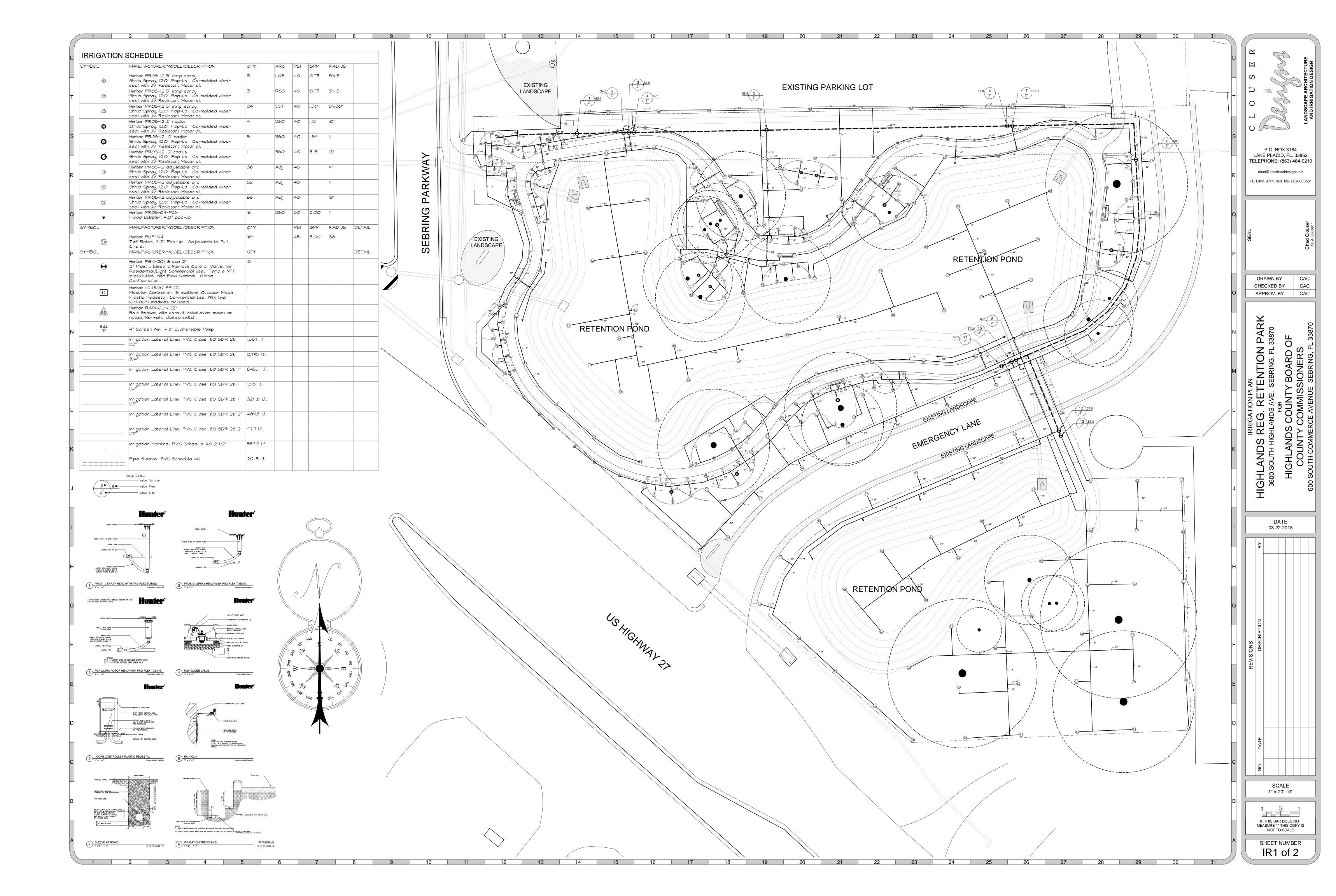
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IRRIGATION GENERAL SPECIFICATIONS

Irrigation contractor shall thoroughly review, read and understand both the plans, details and specificaitons prior to bidding or installing the project. By bidding or installing the project it is assumed the irrigation contractor has read and understands the plans, details and specificaitons and shall fully adhere to all aspects of them.

Install irrigation system in accordance with all applicable codes and ordinances regarding materials, methods of work and disposal of waste material. Obtain and pay for all required permits and inspections.

Visit the site prior to work commencing and examine the conditions under which the work is to be performed. (e.g., check that the site is to grade, if sleeves have been provided in the locations and sizes specified, power is provided to the locations specified, etc.) Do not proceed with the work until all unsatisfactory conditions have been rectified. Proceeding with work assumes that all conditions are satisfactory and no extra compensation shall be allowed to correct the unsatisfactory conditions.

Locate and protect all existing underground and overhead utilities, benchmarks, control points and monuments within the work area. Repairs made due to damage to any of these items will be made at the irrigation contractor's expense. If incorrectly located utilities are encountered, contact the applicable utility company to receive any further instructions or assistance that may be needed.

Take all measures necessary to protect all existing paving, buildings, utilities, etc. on and adjacent to the site. Repair made due to damage to any of these items will be made at the irrigation contractor's expense.

It is the responsibility of the irrigation contractor to satisfy themselves as to the accuracy of the quantities on the plan. If there are any discrepancies between the plan and the material list this should be addressed prior to beginning work. In any instance that a discrepancy does occur between the plan and material list, the plan rules. No extra compensation will be allowed on account of discrepancies between the plan and material list.

It is the responsibilty of the irrigation contractor to satisfy themselves to the installation method of components as depicted in the details or addressed in the specifications. In any instance that a discrepancy does occur between the details and specifications, the more strengent requirement rules. No extra compensation will be allowed on account of discrepancies between the details and specifications.

It is the responsibility of the irrigation contractor to order or provide all material, equipment, labor, etc. necessary to complete the work according to the plans and specifications and to provide a fully functioning automatic irrigation

It is the responsibility of the irrigation contractor when retrofitting or expanding an existing system, to include all material, equipment, labor, etc. to bring all non-code, detail or specification compliant portions of the existing system to current code, details and specifications to compliance. Proceeding with work assumes that all corrective actions are included in the bid and no extra compensation shall be allowed to bring these items to current code, details or specificaitons.

Supply the owner with all instruction sheets, maintenance manuals, and parts sheets covering all of the operating and electrical equipment installed on the job. Also furnish the owner with keys to any locking items installed on the job.

Supply the irrigation designer with a set of asbuilt plans clearly indicating GPS locations and any changes made to the irrigation plans such as main line routing, valve locations or any other field adjustments that were necessary for a

The irrigation designer has the final say in any and all disputes regarding layout, function, performance, material, product, strengency requirements, etc. The irrigation contractor shall take corrective action based on the irrigations designer's instructions. Any corrective action made due to any of these items will be made at the irrigaiton contractor's expense.

Warranty the irrigation system for a period of one year after acceptance for workmanship and material defects. This includes system adjustments, replacement of any damaged parts or broken pipe, unclogging of emmitters and nozzles, cleaning of screens, valve adjustments and all other maintenance items necessary to maintain the system in functioning order. The warranty becomes void in cases of vandalism, fire, lightening strikes or owner negligence for the parts of the irrigation system directly affected. Warranty shall stay fully in effect for all other unaffected portions of the irrigaiton system. Any repair desired or required due to any of these unwarranted causes will be at the owner's expense.

IRRIGATION INSTALLATION SPECIFICATIONS

Irrigation contractor is responsible for verifying that the water source is capable of providing the gallons per minute (gpm) of volume and pounds per square inch (psi) of pressure required for the irrigation system to function as designed prior to commencing installation. Provide this water source information on the water source data portion of the Irrigation Association field audit submission package or in a similar format showing the flow test result.

Water source shall be equipped with a pressure guage that reads in 1 psi increments. Water source shall also be equipped with a pressure relief valve that will eleviate pressure on the system due to a possilbe failure somewhere in the system that allows the water source to run while the system is not. Pressure relief valve shall be pointed away from all electrical equipment and other items that should not be subjected to the blown off water.

Coordinate the irrigation system installation with the landscape contractor and landscaping plan to avoid conflicts between irrigation heads, piping, etc. and palms and tree locations whenever possible.

All piping is to be installed with labels facing. Any piping installed with labels facing down shall be reinstalled correctly at the irrigation contractor's expense.

All main line pipe is to have a minimum cover of 18" of backfill measured from the top of the pipe and all lateral lines are to have a minimum cover of 12" of backfill measured from the top of the pipe unless otherwise specified. Turns and termination in the main line shall be located utilizing at a minimum a GPS WASS system and documented on the plans along with measurements from two fixed points for future locating.

All backfill is to be fine grained and free from stone, rock, etc. larger than 2" in diameter that may damage or cut the pipe. Take care not to damage or deform the pipe when backfilling and compacting.

Assure that all cuts are made squarely and that all pipes and fittings are clean and free from PVC shavings and debris prior to cementing. Be sure to fully engage all joints when cementing. Prime all main line and fittings prior to cementing.

Do not lay marking flags on any hardscape surface such as concrete sidewalks, brick pavers, etc. to avoid causing rust stains. Remove all flags upon conclusion of their usefulness and collect them for future use or properly dispose of them. Irrigation contractor is responsible for the removal or correction of any rust stains caused by the marking

Flush all pipes and body assemblies prior to sprinkler head installation. When installing nozzles or body assemblies while flushing under pressure, start at the heads nearest the valve and work toward the end of the lateral run to force debris toward the end. When retrofitting or expanding an existing irrigation system all existing heads and zones shall be flushed as though they were newly installed. Flush only one zone at a time and allow a minimum of 15 minutes time for the system to flush prior to installing nozzles or body assemblies. If the irrigation contractor is found to be flushing multiple zones at a time or not allowing adequate time for each zone to properly flush, all nozzles and body assemblies shall be removed, flush caps reinstalled on spay heads and the entire system will be required to be flushed again at the irrigation contractor's expense.

All systems shall be voltage checked for each wire run at the clock, between valves, splices, grounding modules and decoders and the voltage shall be recorded on the plans for each item. If an unusual resistance (an ohm load more than 10 percent different than all other wire runs of similar gauge and length) is incountered the irrigation designer shall be notified the problem shall be corrected at the irrigation contractor's expense.

After installation, field adjust the entire system to assure proper 100% head to head coverage and to minimize overspray onto paved surfaces. Assure that all heads are a minimum of 12" from any building and that they are not directly spraying onto the building. Assure that all turf heads are a minimum of 3" from the edge of sidewalks, parking or any other hardscape area that may require an edger for maintenance. Assure that all drip zones are spaced at the designed or specified distances. No extra compensation shall be allowed for readjusting heads or respacing drip

Utilizing at a minimum a GPS WASS system, document all major irrigation component locations. These include valves or valve clusters, any underground sensors, main line turns, wire splices, sleeves, and any other components that might aid in future system maintenance, repairs or modifications.

IRRIGATION MATERIAL SPECIFICATIONS

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Irrigation contractor shall use the items specified in the material list or specifications for all bidding, ordering and installation. Do not substitute items or change sizes of irrigation components or piping without prior written consent from the irrigation designer. Unauthorized substitutions or under sizing of components or piping will constitute an immediate failure upon inspection and shall be replaced with the item of the correct size or manufacturer at the irrigation contractor's expense and irrigation contractor shall be responsible for all subsiquent future inspections of failed item.

All material shall be installed according to manufacturer's specifications unless otherwise noted. In any instance that a discrepancy does occur between the manufacture's specifications and the irrigation plans, details and specifications, the more strengent requirement rules.

Securely install the specified controller in the location shown on the irrigation plan or in a location coordinated with the owner or their representative. The owner is responsible for providing all necessary electrical for the controller.

All controllers shall be equipped with a rain sensor device that will override the irrigation cycle of the system when adequate rainfall has occurred. This sensor shall be properly wired into the controller, in the on position, outside the range of the irrigation system and mounted in an area to receive rainfall.

All controllers utilized in coordination with a well must be supplied with an accompanying pump start relay and a control box if single phase or a magnetic starter if three phase. The irrigation contractor shall coordinate the phasing, voltage, disconnect location, amps, etc. with the owner or their representative prior to ordering the pump. The irrigation contractor is responsible for verifying that the well and pump is capable of providing the gallons per minute of volume and pounds per square inch of pressure required for the irrigation system to function as designed prior to commencing installation.

All controllers utilized in coordination with a continually pressurized water source such as a city water meter must be supplied with an accompanying master valve and appropriately sized backflow-preventer that adheres to all local ordinances. The irrigation contractor is responsible for verifying that the water source is capable of providing the gallons per minute of volume and pounds per square inch of pressure required for the irrigation system to function as designed prior to commencing installation.

All valves are to be electric valves of the brand and type specified in the irrigation plan material list and shall be sized according to their location on the plan and their accompanying key. All valves are to be installed in a minimum 12" X 18" green plastic valve box unless otherwise specified. The top of the box is to be flush with finished grade. All valve clusters are to be installed with a capped stub out for ease of future expansion. Number each valve box according to the valve number found on the irrigation plans. Each valve or valve cluster shall also be located utilizing at a minimum a GPS WASS system and documented on the plans for future locating.

All remote valve control wire shall be 14-1 UF direct burial wire for use with 24 VAC applications. Place wire under pipes whenever possible to help avoid accidental cutting. Common wire is to be white. Control wire is to be red. Run two blue wires from the controller to the farthest valve in each direction for spares.

All standard remote control valve wire that utilizes a common wire and multiple hot wires shall be spiced to the electric valves using DBY or DBR splice kits of the appropriate size. All "Two-Wire" valve wire shall be spliced to the Decoders using DBY-6 or DBR-6 splice kits of the

Provide a minimum of 24" expansion coils in the wire at every valve connection, at every sharp turn and at 100' intervals along straight runs of wire.

All irrigation pipes and control wires passing under sidewalks, drives or other paved or hard surfaces shall be placed in a schedule 40 PVC sleeve.

All main line pipe shall be schedule 40 PVC and all lateral pipes shall be class 160 PVC unless specified differently in the irrigation plan material list.

be sized and the head adjusted according to their location on the plan.

All rotor heads are to be of the brand specified in the irrigation plan material list and the nozzle shall

All spray heads are to be of the brand specified in the irrigation plan material list and their spray pattern and radius shall match their location found on the plan.

All bubbler heads are to be of the brand specified in the irrigation plan material list and shall be against the rootball of the tree they are intended to water on the uphill side.

All sprinkler heads shall be in a plumb or vertical position as per their detail and all pop up sprinklers shall be affixed to swing joints or funny pipe limited to a length of 18" unless otherwise noted.

IRRIGATION SLEEVE SPECIFICATIONS

Irrigation sleeves shall be schedule 40 PVC pipe. All fittings shall be schedule 40.

All cuts to the irrigation sleeves shall be made squarely and all connections between pipes shall be fully engaged to eliminate any inconsistent gaps at fittings or bell end connections that can cause pipes passing through to catch.

Irrigation sleeves shall be installed a minimum of 18" below the paving they are passing under and shall extend 18" beyond the paving or as per code if more stringent.

Irrigation sleeves shall be installed where shown on the plans. If the irrigation sleeves cannot be installed where shown on the plans, they shall be field adjusted. This adjustment must still allow access to the area the irrigation sleeves where intended to service. This adjustment shall be documented on the plans for future locating of the irrigation sleeves and asbuilt preparation. Irrigation sleeves shown directly adjacent to each other on the plans shall be placed in a single

Irrigation sleeves shall be installed at the size shown on the plans. If no size is indicated on the plans, the irrigation sleeve shall be a minimum of twice the diameter of the pipe passing through it. This will allow for adequate room in the irrigation sleeve for the pipe passing through it and any necessary control wires. If it is believed that the diameter of the irrigation sleeve is not sufficient to allow all of the required control wires to pass through along with the piping, an additional irrigation sleeve shall be added at a size sufficient for all necessary control wire to pass through.

The ends of the irrigation sleeves shall be marked with pipe, boards, etc. prior to backfilling the trench for ease of future locating. The ends of the irrigation sleeves shall also be located utilizing at a minimum a GPS WASS system and documented on the plans for future locating in the event the physical marker is removed or destroyed during site work. The GPS locations shall also be documented on the asbuilts to aid in locating the irrigation sleeves at any point in the future.

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MISC.NOTES

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Do not bid or install the project without the landscape and irrigation specifications. Doing so assumes you agree the the

Contractor to verify the water supply will provide approximately 60 GPM @ 40 PSI for spray zones and 55 GPM @ 50 PSI for rotor zones for proper system operation prior to installation. Notify Landscape Architect prior to installation if this is impractical.

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