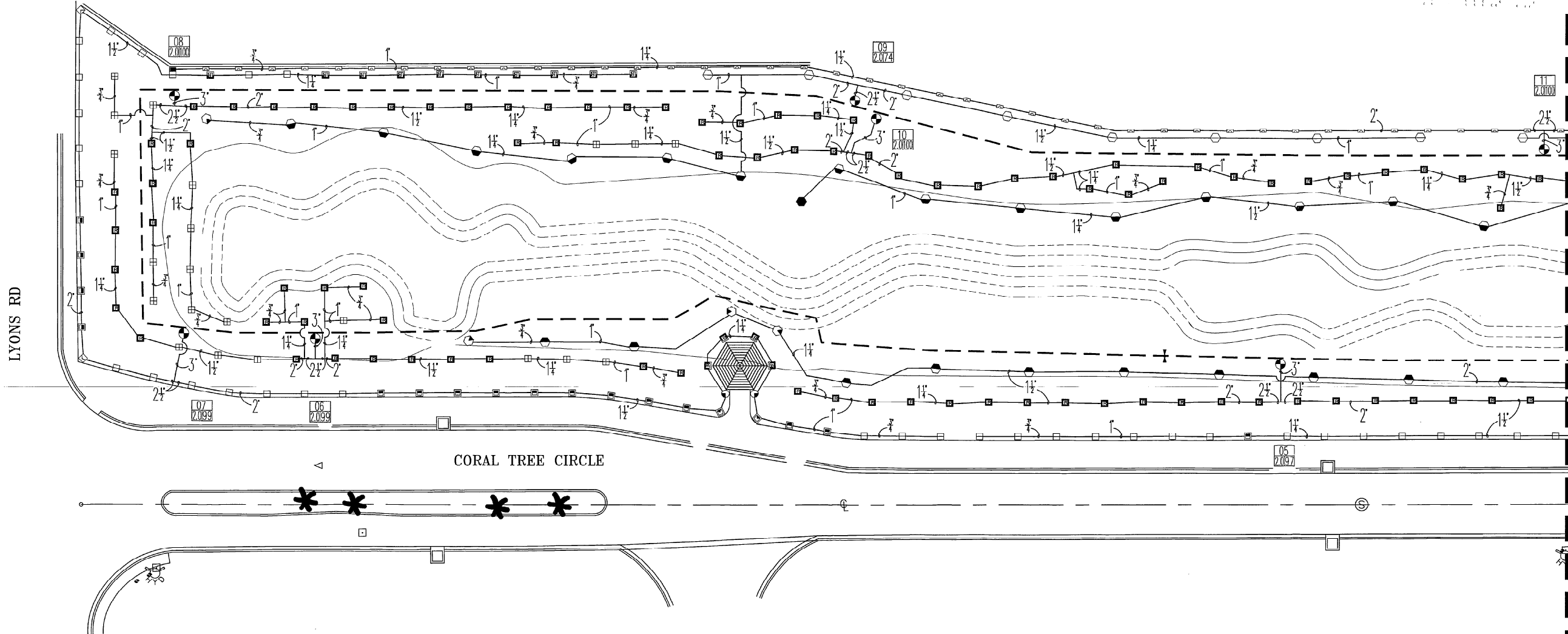


08/10/05  
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**CORAL TREE LINEAR PARK**  
 PREPARED FOR TOWN & COUNTRY BUILDERS, INC.  
 CITY OF COCONUT CREEK, FLORIDA

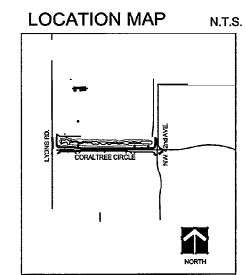


MATCHLINE SEE SHEET 2

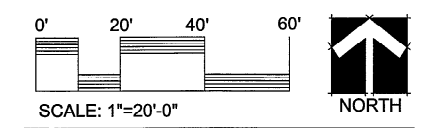
72 HOURS  
 BEFORE YOU DIG  
 CALL SUNSHINE  
 1-800-432-4770

FOR EMERGENCY CONTACT OF  
 AT&T CALL 1-800-252-1133

MAINLINE LOCATION, WHERE SHOWN, IS FOR GRAPHIC CLARITY PURPOSES ONLY. INSTALL AT THE BACK OF CURB, FRONT OF WALK, BACK OF WALK, OR ADJACENT TO OTHER HARDSCAPES TO FACILITATE FUTURE LOCATION AND TO PROTECT FROM DAMAGE. ENSURE MAINLINE IS INSTALLED ACCORDING TO THE IRRIGATION SPECIFICATIONS AND DETAILS.



Masven Consulting LLC  
 Irrigation Consultant  
 32801 Hwy 441 N. #293  
 Oklawaha, FL 34972  
 Telephone (863) 467-4115  
 Fax (863) 763-9196



**GREENWAY IRRIGATION PLAN**

2101 Centropark West Drive, Suite 100  
 West Palm Beach, FL 33409  
 561-478-8501

SCALE: 1" = 20'-0"  
 DRAWN BY: MAW  
 DRAWING #: 710.13\_greenway\_IR12-13-05.dwg  
 FILE #: 710.13  
 DATE: 08/10/05  
 REVISED: 12/13/05

SHEET #  
**1 OF 5**



Landscape Architectural Land Planning/Environmental Consulting

# CORAL TREE LINEAR PARK

PREPARED FOR TOWN & COUNTRY BUILDERS, INC.  
CITY OF COCONUT CREEK, FLORIDA

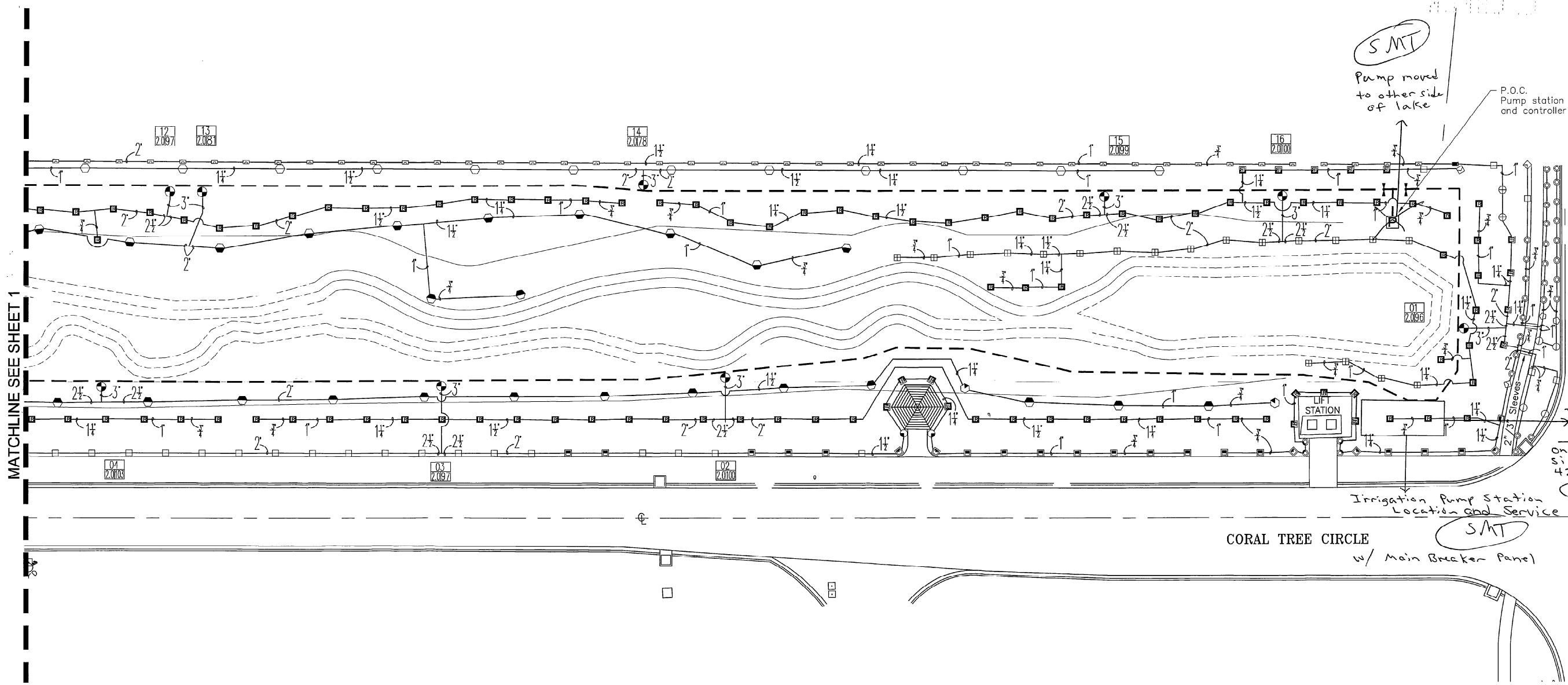
## GREENWAY IRRIGATION PLAN

MAR 11 2005

2101 Centrepark West Drive, Suite 100  
West Palm Beach, FL 33409  
561-478-8501

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SHEET #  
2 OF 5



MATCHLINE SEE SHEET 1

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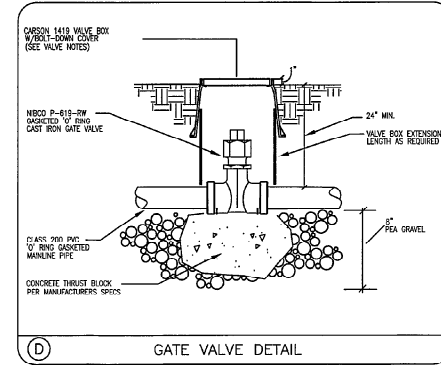
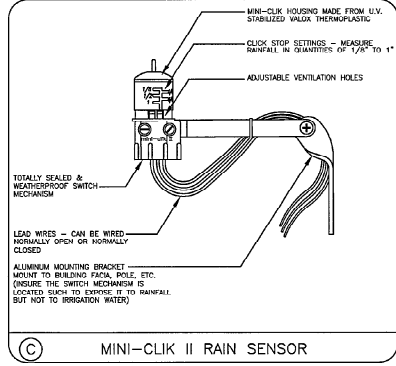
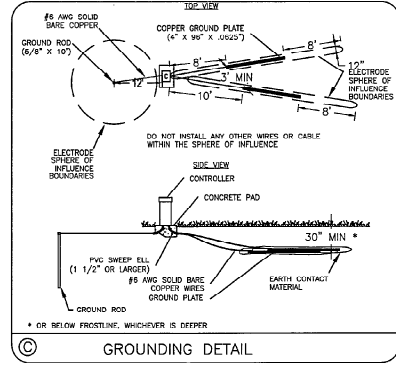
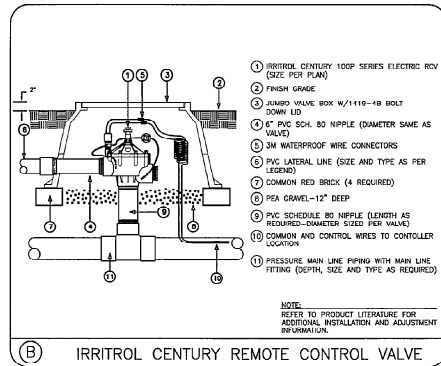
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LOCATION MAP N.T.S.

Masuen Consulting LLC  
Irrigation Consultant  
32801 Hwy 441 N. #293  
Okeechobee, FL 34972  
Telephone (863) 467-4115  
Fax (863) 763-9196

SCALE: 1" = 20'-0"  
NORTH

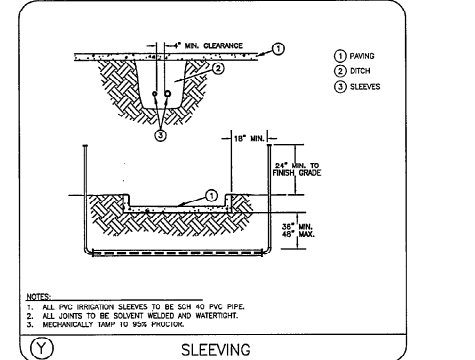
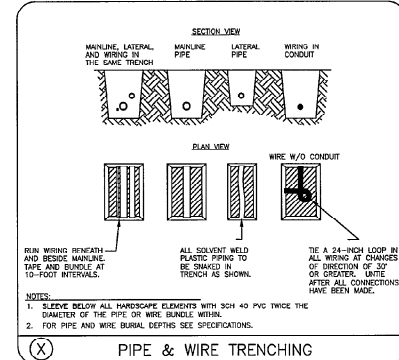
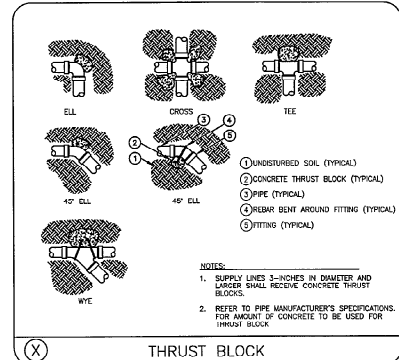
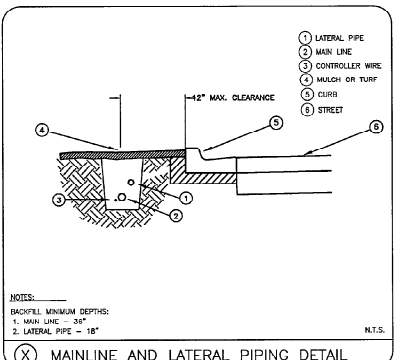
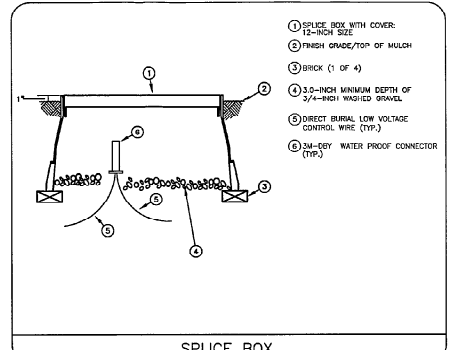
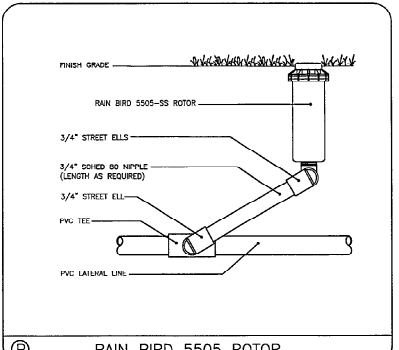
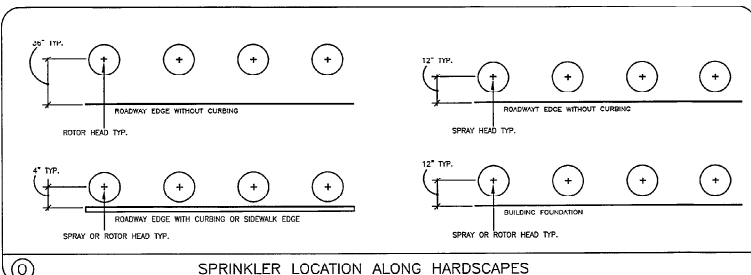
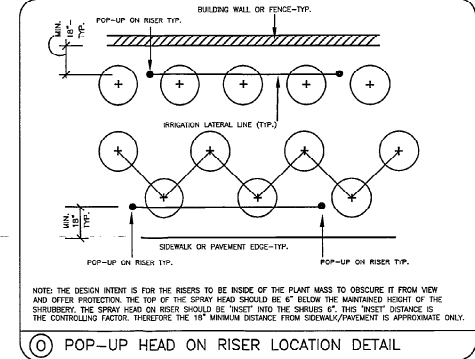
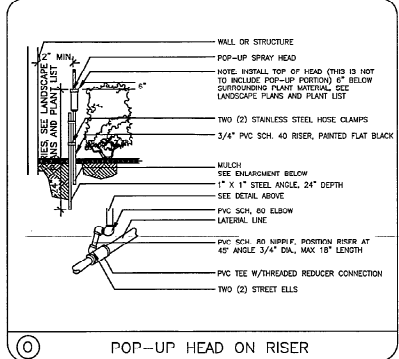
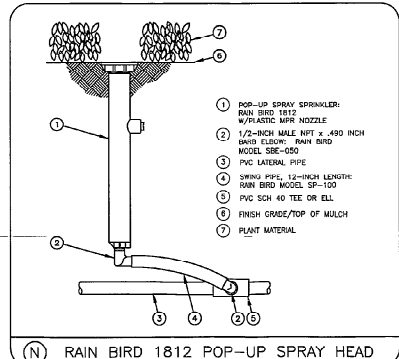
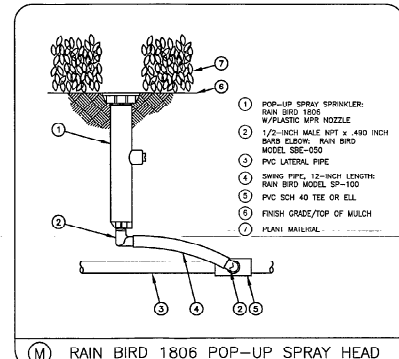


**IRRIGATION LEGEND**

QTY/SYM	DESCRIPTION	DET.	HEAD DESIGN PRESSURE (P.S.I.)	HEAD DESIGN FLOW RATE (G.P.M.)
1	STATION NUMBER			
	GALLONS PER MINUTE (CATALOG FLOW) 2300/30 < M1			
1	HOOPER PUMP PREFABRICATED, FIBERGLASS ENCLOSED, PRESSURE DEMAND PUMP STATION, MODEL #HCF-10PD-2007, E-24, L, Z. PUMP POWER IS 230/1 PHASE. THE WATER SUPPLY IS A LAKE. CONTROLLER IS A RAIN BIRD ESP-24 SITE SA/T CONTROLLER WITH A RAIN BIRD RAIN CAN. MOUNT RAIN CAN ADJACENT TO PUMP STATION	A		
16	IRRITROL CENTURY 100P SERIES RCV (SIZED PER PLAN) IN A CARSON JUMBO VALVE BOX	B		
3	NIBCO P-619-RW GASKETED 'O' RING CAST IRON GATE VALVE (LINE SIZE) IN A CARSON 1419 VALVE BOX.	D		
3	RAIN BIRD 1806-8Q-SAM-PRS	M	30	.26
24	RAIN BIRD 1806-8H-SAM-PRS	M	30	.52
4	RAIN BIRD 1812-8Q-SAM-PRS	N	30	.26
2	RAIN BIRD 1806-10H-SAM-PRS	M	30	.79
4	RAIN BIRD 1806-12H-SAM-PRS	M	30	1.30
2	RAIN BIRD 1806-12F-SAM-PRS	M	30	2.60
4	RAIN BIRD 1812-12Q-SAM-PRS	N	30	.65
2	RAIN BIRD 1806-15Q-SAM-PRS	M	30	.92
2	RAIN BIRD 1806-15T-SAM-PRS	M	30	1.23
58	RAIN BIRD 1806-15H-SAM-PRS	M	30	1.85
1	RAIN BIRD 1806-15TT-SAM-PRS	M	30	2.48
40	RAIN BIRD 1806-15F-SAM-PRS	M	30	3.70
7	RAIN BIRD 1812-15Q-SAM-PRS	N	30	.92
34	RAIN BIRD 1812-15H-SAM-PRS	N	30	1.85
22	RAIN BIRD 1812-15H-SAM-PRS ON SCH 40 RISER	O	30	1.85
8	RAIN BIRD 1812-15TT-SAM-PRS ON SCH 40 RISER	O	30	2.48
2	RAIN BIRD 1812-15TQ-SAM-PRS ON SCH 40 RISER	O	30	2.78
175	RAIN BIRD 1812-15F-SAM-PRS ON SCH 40 RISER	O	30	3.70
1	RAIN BIRD 1806-15EST-SAM-PRS	M	30	.61
86	RAIN BIRD 1806-15SST-SAM-PRS	M	30	1.21
2	RAIN BIRD 1812-15EST-SAM-PRS	N	30	.61
21	RAIN BIRD 5505-SS ROTOR WITH #6 STANDARD NOZZLE (HALF CIRCLE)	P	60	5.6
6	RAIN BIRD 5505-SS ROTOR WITH #3 STANDARD NOZZLE (QUARTER CIRCLE)	P	60	3.4
49	RAIN BIRD 5505-SS ROTOR WITH #4 STANDARD NOZZLE (HALF CIRCLE)	P	60	3.80
1	RAIN BIRD 5505-SS ROTOR WITH #5 STANDARD NOZZLE (FULL CIRCLE)	P	60	4.70
	3" CLASS 200 PVC GASKETED 'O' RING MAINLINE WITH HARCO DUCTILE IRON FITTINGS	X		
	LATERAL LINE (SIZED PER PLAN) - CLASS 200 FOR 3/4" - CLASS 160 FOR 1" AND ABOVE	X		
	SCH 40 PVC SLEEVES (SIZED PER PLAN)	Y		

QUANTITIES GIVEN ARE FOR CONTRACTOR CONVENIENCE ONLY. THE ACCURACY IS NOT GUARANTEED. ALL QUANTITIES SHALL BE VERIFIED.

\*DET (ON THE LEGEND) - THE LETTER IN THIS COLUMN DENOTES THE CORRESPONDING DETAIL SHOWN ON THE DETAIL SHEET.



NOTES:

- STATIC SUCTION LIFT FOR THE PUMP STATION CAN NOT EXCEED 10'. IF THIS MAXIMUM IS EXCEEDED, DO NOT PROCEED WITHOUT WRITTEN PERMISSION FROM THE OWNER/OWNER'S REPRESENTATIVE.
- AFTER THE WELL IS DRILLED, A STEP TEST MUST BE PERFORMED ON THE WELL TO VERIFY THE WELL CAN PRODUCE THE REQUIRED VOLUME OF WATER (AS SPECIFIED) ON A CONTINUAL BASIS (8 HOURS/DAY). THE RESULTS OF THIS TEST MUST BE APPROVED BY THE OWNER/OWNERS REPRESENTATIVE PRIOR TO THE INSTALLATION OF THE PUMP OR IRRIGATION SYSTEM COMPONENTS. IF THE CONTRACTOR DOES NOT FOLLOW THESE REQUIREMENTS AND THE WELL PROVES TO BE INSUFFICIENT, THE CONTRACTOR BEARS 100% OF THE RESPONSIBILITY AND COSTS TO CORRECT/MODIFY THE SYSTEM TO ACCOMMODATE THE EVENTUAL WATER SOURCE.
- AFTER DRILLING THE WELL, CHECK THE WATER QUALITY TO ENSURE IT IS SUITABLE FOR LANDSCAPE PLANTINGS. USE THE SERVICES OF A REPUTABLE, LICENSED LABORATORY ONLY. IF THE WATER IS DETERMINED SUITABLE CONTINUE IRRIGATION INSTALLATION. IF THE WATER QUALITY IS UNSUITABLE, DO NOT PROCEED WITHOUT WRITTEN PERMISSION FROM THE OWNER/OWNER'S REPRESENTATIVE.
- IF A HIGH IRON CONTENT (OR OTHER STAIN PRODUCING COMPOUND) IS DETECTED, ADVISE THE OWNER/OWNER'S REPRESENTATIVE. DO NOT PROCEED WITHOUT WRITTEN PERMISSION. IF STAINING IS A CONCERN, A CHEMICAL FEED PUMP SYSTEM SHOULD BE INSTALLED BY THE PUMP SYSTEM MANUFACTURER. CONTACT HOOPER PUMPING SYSTEMS.
- CONTRACTOR TO PROVIDE NEW WELL UP TO 100' DEEP, WITH DIAMETER AS SPECIFIED. PROVIDE A LINE ITEM 'PER FOOT' COST FOR EACH ADDITIONAL FOOT OF DEPTH, IF NEEDED. CONTRACTOR SHALL NOT DRILL THE WELL DEEPER THAN 100' WITHOUT RECEIVING PRIOR WRITTEN AUTHORIZATION. IF PRIOR AUTHORIZATION IS NOT OBTAINED, IN WRITING, NO ADDITIONAL MONIES WILL BE PAID.
- THE IRRIGATION SYSTEM SHALL BE CONTROLLED BY A RAIN BIRD MAXICOM2 CENTRAL CONTROL SYSTEM. CONTRACTOR IS RESPONSIBLE FOR PROVIDING A FULLY FUNCTIONAL MAXICOM2 SYSTEM, INCLUDING ALL FIELD COMPONENTS. CONTRACTOR IS NOT RESPONSIBLE FOR PROVIDING THE MONITORING COMPUTER OR SOFTWARE.

THE SYSTEM MUST COMPLY WITH THE CURRENT RAIN BIRD MAXICOM2 INSTALLATION MANUAL. ALL COMPONENTS SHALL BE INSTALLED BY A RAIN BIRD LEVEL 2, OR ABOVE, CERTIFIED MAXICOM2 INSTALLATION TECHNICIAN. NO DEVIATIONS FROM THE INSTALLATION MANUAL WILL BE PERMITTED WITHOUT WRITTEN PERMISSION FROM THE OWNER OR THE OWNER'S REPRESENTATIVE.

- THE CONTROLLER IS TO BE INSTALLED INSIDE THE PUMP STATION. CONTRACTOR TO RUN REQUIRED PHONE LINE, FLOW SENSOR, AND MASTER VALVE WIRING FROM THEIR RESPECTIVE COMPONENTS TO THE CONTROLLER, AS REQUIRED. CONNECT THE NORMALLY OPEN MASTER VALVE TO STATION #23. CONNECT THE RAIN SENSOR TO SENSOR PORT 'B' AND THE FLOW SENSOR TO SENSOR PORT 'A'.



**CORAL TREE LINEAR PARK**  
PREPARED FOR TOWN & COUNTRY BUILDERS, INC.  
CITY OF COCONUT CREEK, FLORIDA

**IRRIGATION DETAILS**

SCALE: N.T.S.

DRAWN BY: MAW

DRAWING #: 710.13\_greenway\_IR12-13-05.dwg

FILE #: 710.13

DATE: 08/10/05

REVISED: 12/13/05

SHEET #

3 OF 5

**Irrigation Pump Station:**

The manufactured pump system shall be a pressure demand self-diagnostic type, totally contained within a fiberglass enclosure on a structural aluminum skid with mounting brackets for control panel and irrigation controller. The system manufacturer shall have radio dispatched service vehicles and be responsible for warranting the entire pump system, including the suction and discharge piping. The system shall be a model HCF-10.OPD-230V/3Ø-E-24,L,Z as manufactured by Hoover Pumping Systems, Pompano Beach, Florida (954) 971-7350

230V/3Ø SMT

**Pump:**  
The pump shall be a 10.0 horsepower flanged centrifugal pump with cast iron assembly and bronze or cast iron impeller. The pump shall yield 110 G.P.M. at 200 T.D.H. The motor shall have ball bearings, stainless steel shaft and operate on the electric service voltage and phase available. A pressure and thermal sensor shall be provided in the pump volute.

**Control Panel:**  
The control panel assembly shall be underwriters laboratory listed for industrial control panel usage under 508a. The enclosure shall be Nema 4x with door mounted non-fusible service disconnect, reset button, normal override, hand/off/auto switch, IEC starter and overload for full voltage start, pressure switch, and transient voltage suppression.

The system shall automatically self-diagnose the first system fault and display this condition on the panel display with a status light. The system shall diagnose and display the following shutdown conditions: low pressure, loss of prime, pump overload, and service required. A rapid cycle feature will prevent the pump system from excess on/off cycling of the motor. The system will record time operated in each mode and total times faults have occurred.

**Discharge Header:**  
The discharge header shall be schedule 40 galvanized steel pipe and vicalc fittings with flow switch and discharge butterfly valve. A 2" cast iron normally open 'Maxicom' control valve and a Rain Bird IR22BB insert flow meter shall be installed in the discharge header within the fiberglass enclosure. The flow meter shall be wired to a PT322 pulse transmitter mounted inside a NEMA 4 enclosure also mounted inside the station enclosure. The flow meter shall be installed on the discharge header to ensure the 10/5 pipe size diameter 'interference' distances are maintained.

**Hydraulic Pneumatic Pressure Vessel:**  
Diaphragm-type fiberglass construction tank with precharged air chamber air/water separator shall be provided. The tank shall have a maximum working pressure rating of 100 P.S.I. and a 20 gallon capacity.

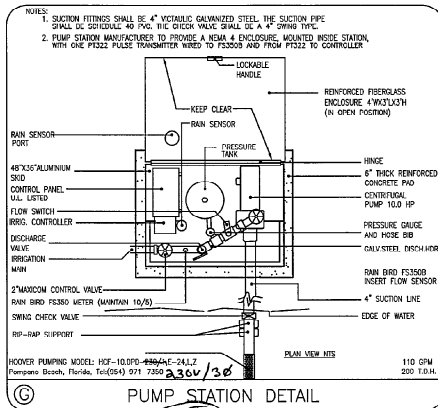
**Enclosure:**  
The pump system shall be enclosed with a fiberglass structure having a minimum 5/16" thickness throughout. The structure shall be reinforced with a minimum of 2-3 ply, 9 oz. Total glass mat laminate with reinforcing at the hinge point and base. The glass mat flexural strength shall be 28,000 P.S.I. at 77 F. and nondistorting below 500 F. The gel coat and resin shall be highly chemical and ultraviolet resistant. The resin shall have a flexural strength of 11,000 P.S.I. at 175 F. The enclosure shall have a self locking latch with stainless steel handle. The hinge shall span the width of the enclosure.

**Discharge Line:**  
The discharge line shall be galvanized steel pipe from the pump station discharge header to the connection point of the irrigation mainline with vicalc coupling. All fittings shall be vicalc galvanized steel.

**Suction Line:**  
The suction line shall be 4" schedule 40 PVC pipe from the pump volute to the well head. A galvanized steel 90 fitting shall be used at the pump volute. The suction line shall terminate at the well head with a cast iron vicalc swing check valve, connected to schedule 40 PVC pipe to a screen with #10 mesh, 316 stainless steel cloth capable of handling at least five times the full flow requirement of the pumping system shall be placed in the 4" galvanized 'T' at the well head.

**Irrigation Controller:**  
Rain Bird ESP-24SITE-W, a 24-station site satellite 'Maxicom' controller connected to a Rain Bird rain can that shall be mounted on a 2" galvanized steel pole adjacent to pump station (sensor port 'B'). Connect master valve to station 23 and the flow sensor to sensor port 'A'. The controller shall be powered from a fuse block in the pump system control panel.

**Slab:**  
The mounting slab shall be 6" thick concrete manufactured and provided by the pump system manufacturer.



**MAXICOM NOTES & SPECIFICATIONS**

MAXICOM design is based on Land Design South's revised Landscape Plan dated 7/26/05. Contractor shall refer to this plan to coordinate controller, flow sensors, wiring, etc. installation with the general contractor and any and all other affected trades. The system has been designed to conform with the requirements of all applicable codes. Should any conflict exist, the requirements of the codes shall prevail. It is the responsibility of the owner/installation contractor to insure the entire system is installed according to all applicable laws, rules, regulations and conventions.

**THE WORK**

The work specified in this section consists of furnishing all components necessary for the installation, testing, and delivery of a complete, fully functional Rain Bird MAXICOM2 'site sat' irrigation central control system that fully complies with the current MAXICOM2 installation manual, Maxicom plans, specifications, notes, details and all applicable laws, regulations, codes and ordinances. This work shall include, but not be limited to, the providing of all required material (controllers, flow sensors, rain cans, fittings, surge protection, grounding, wire, etc.), layout, protection to the public, excavation, assembly, installation, back filling, compacting, repair of road surfaces, controller and low voltage feeds from valves to pump station, meters, etc., cleanup, maintenance, guarantee and as-built plans.

The system is designed to be a Rain Bird MAXICOM2 system utilizing 'site satellite' that will communicate with the 'central' via a phone line. The contractor shall coordinate the installation and setup of this phone line. The fees associated with initial connection and ongoing monthly fees will be paid by others.

Contractor shall verify all underground utilities 72 hours prior to commencement of work.

It is the responsibility of the installation contractor to familiarize himself with all grade differences, location of walls, retaining walls, structures and utilities. Do not willfully install any components, as shown on the drawings, when it is obvious in the field that unknown obstructions, grade differences or differences in the area dimensions exist that might not have been considered in the engineering. Such obstructions, or differences, should be brought to the attention of the owner's authorized representative. In the event this notification is not performed, the installation contractor shall assume full responsibility for any revisions necessary.

The installation contractor shall repair or replace all items damaged by his work. He shall coordinate his work with other contractors for the location and installation of wire sleeves through walls, under roadways and paving, etc.

The contractor shall take immediate steps to repair, replace, or restore all services to any utilities which are disrupted due to his operations. All costs involved in disruption of service and repairs due to negligence on the part of the contractor shall be his responsibility.

**ELECTRICAL POWER SUPPLY**

Electrical supply for the controllers, etc. to be provided by installation contractor. Contractor to coordinate with local utilities for the installation of, and connection to, site available power supply's for required electrical components as set forth in the Maxicom plans.

All electrical to comply with the National Electrical Code and any, and all, other applicable electrical codes, laws and regulations.

**WIRING**

Irrigation control wire shall be thermoplastic solid copper, single conductor, low voltage irrigation controller wire; for direct burial and continuous operation at rated voltages.

Tape and bundle control wires every 10'. At all turns in turns make a 2' coil of wire. Make electrical connections with 3M-DBR connectors when connections are below grade and/or exposed to the weather.

Number all wires, using an electrical book of numbers, according to the plans. Number wires in all valve boxes, junction boxes and at the controller.

Wire sized, numbered and colored as follows:

- #12 white for common
- #12 spare black common
- #14 red for hot wires
- #14 spare yellow hot wire

**Spare wires**

Run spare wires into every RCV valve box. Install a minimum of 2 common and 4 hot wires, in all directions, to every RCV connected to its respective controller.

MAXICOM2 'two wire' (for communication between flow meters and controllers) shall be PE-39 'three pair' #19 wire installed in 1-1/2" PVC grey conduit with pull boxes at 300' on center.

**Controller grounding** - Contractor to utilize 4"x8"x5/8" copper grounding plates, 5/8"x10" copper clad grounding rods, 'one strike' CAD welds at all connection points, #6 bare copper wire, and earth contact material. Install these and other required components as outlined in the details. Contractor to verify that the earth to ground resistance does not exceed 10 ohms. Contractor shall provide a written certification, on an electrical contractors letter head, showing the date of the test, controller location, and test results. Each controller, CCU, and weather station shall be tested.

**EQUIPMENT**

All equipment shall be as specified on the plans and required in the current MAXICOM2 installation manual. All components must be installed in a manner to insure compliance with all Federal, state, and local laws, rules, regulations, etc.

**LAYOUT**

Location of components, as shown on the MAXICOM2 plans, is diagrammatic in nature. The exact location of installation for each component shall be field determined and must comply with the latest MAXICOM2 installation manual. No deviations from this manual are allowed without prior written approval from the owner or owners authorized representative.

**TRENCHING**

Excavate straight and vertical trenches with smooth, flat or sloping bottoms. Trench width and depth should be sufficient to allow for the proper depth of coverage to provide adequate protection and comply with any and all laws, codes, regulations, etc. In no instance shall the Maxicom wire, control wires, etc. be installed with less than two (2) feet of coverage as measured from top of finished grade.

Protect existing landscaped areas. Remove and replant any damaged plant material upon job completion. The replacement material shall be of the same genus and species, and of the size of the material it is replacing. The final determination as to what needs to be replaced and the acceptability of the replacement material shall be solely up to the owner or owner's representative.

**INSTALLATION**

All major components are shown on the MAXICOM2 plans, notes, and details. However, all required components necessary to provide a fully functional Maxicom 2 system (excluding the central computer and software), must be included and be in strict compliance with the current MAXICOM2 installation manual. The contractor should refer to this manual to insure all required components, whether specifically identified in these plans or not, is included in their proposal and installation.

**BACK FILL**

Wiring shall be installed so the following minimum back fill depths are maintained:

- 24" for all wire whether installed in conduit or not.
- 36" for all wire installed in sleeving under roadways and walks.

Back fill shall be of suitable material free of rocks, stones, or other debris.

**MAXICOM**

The irrigation system shall be controlled by a Rain Bird Maxicom2 central control system. Contractor is responsible for providing a fully functional Maxicom2 system, including all field components, but excluding the computer and monitoring software.

The system must comply with the current Rain Bird Maxicom2 installation manual. All components shall be installed by a Rain Bird Level 2, or above, certified Maxicom installation technician. No deviations from the installation manual will be permitted without written permission from the owner or the owner's representative.

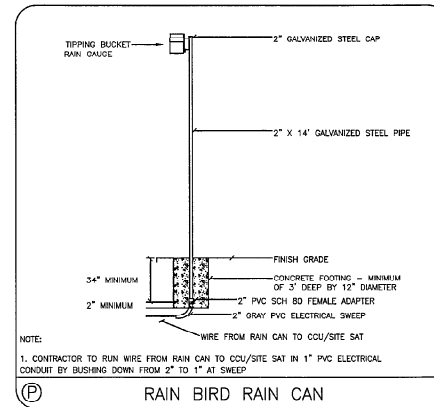
Irrigation Contractor to pay for one (1) year central control support by Rain Bird to be provided to City or their designated representative.

**FINAL ACCEPTANCE**

Final acceptance of the Maxicom2 control system will be given after the following documents and conditions have been completed and approved. Final payment will not be released until these conditions are satisfied.

1. Final walk-thru and correction of all punch list items.
2. Completion and acceptance of 'as-built' drawings.
3. Acceptable field demonstration of the entire Maxicom2 control system.
4. Written verification showing the grounding at the controller is less than 5 ohms.

**QUARANTEE:** The Maxicom2 systems shall be guaranteed for a minimum of one calendar year from the time of final acceptance.



**LAND DESIGN SOUTH**  
 Landscape Architecture/Land Planning/Environmental Consulting  
**CORAL TREE LINEAR PARK**  
 PREPARED FOR TOWN & COUNTRY BUILDERS, INC.  
 CITY OF COCONUT CREEK, FLORIDA

**IRRIGATION PUMP AND MAXICOM NOTES & DETAILS**  
 2101 Centepark West Drive, Suite 100  
 West Palm Beach, FL 33409  
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**4 OF 5**

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CORAL TREE LINEAR PARK  
PREPARED FOR TOWN & COUNTRY BUILDERS, INC.  
CITY OF COCONUT CREEK, FLORIDA

#### IRRIGATION NOTES & SPECIFICATIONS

Irrigation design based on Land Design South's revised Landscape Plan dated 7/26/05. Contractor shall refer to these plans to coordinate sprinkler and pipe locations.

The system has been designed to conform with the requirements of all applicable codes. Should any conflict exist, the requirements of the codes shall prevail. It is the responsibility of the owner/installation contractor to insure the entire system is installed according to all applicable laws, rules, regulations and conventions. Irrigation contractor responsible for obtaining all required permits according to federal, state and local laws.

The scope of work is shown on the plans, notes and details. The Irrigation Contractor shall be certified as a CERTIFIED IRRIGATION CONTRACTOR by the Irrigation Association. The certification shall be current and in good standing.

#### THE WORK

The work specified in this section consists of furnishing all components necessary for the installation, testing, and delivery of a complete, fully functional automatic landscape irrigation system that completely complies with the irrigation plans, specifications, notes, details and all applicable laws, regulations, codes and ordinances. This work shall include, but not be limited to, the providing of all required material (pipe, valves, fittings, controllers, wire, primer, glue, etc.), layout, protection to the public, excavation, assembly, installation, back filling, compacting, repair of road surfaces, controller and low voltage feeds to valves, cleanup, maintenance, guarantee and as-built plans.

All irrigated areas shall provide 100% head-to-head coverage from a fully automatic irrigation system with a rain sensor. The rain sensor shall be installed to prevent activation of rain sensor by adjacent heads. All watering procedures shall conform to local codes, as well as this project's regional Water Management District restrictions and regulations. Zones are prioritized first by public safety and then by hydraulic concerns. This sequencing will be a mandatory punch list item. These plans have been designed to satisfy/exceed the Florida Building Code (FBC) Appendix F and the Florida Irrigation Society Standards and Specifications for Turf and Landscape Irrigation Systems, fourth edition.

Contractor shall verify all underground utilities 72 hours prior to commencement of work.

It is the responsibility of the irrigation contractor to familiarize themselves with all grade differences, location of walls, retaining walls, structures and utilities. Do not willfully install the sprinkler system as shown on the drawings when it is obvious in the field that unknown-obstruction, grade-differences-or differences-in-the-area dimensions exist that might not have been considered in the engineering. Such obstructions, or differences, should be brought to the attention of the owner's authorized representative. In the event this notification is not performed, the irrigation contractor shall assume full responsibility for any revisions necessary.

Irrigation contractor shall repair or replace all items damaged by their work. Irrigation contractor shall coordinate their work with other contractors for the location and installation of pipe alcoves and laterals through walls, under roadways and paving, etc.

The contractor shall take immediate steps to repair, replace, or restore all services to any utilities which are disrupted due to their operations. All costs involved in disruption of service and repairs due to negligence on the part of the contractor shall be their responsibility.

#### POINT OF CONNECTION (P.O.C.)

The P.O.C. is a new Hoover pumping systems pump station model #HCF-10,OPD-230/1,E-24,L,Z and the water source is a lake. The P.O.C. must be capable of delivering a minimum of 110 GPM at 200 TDH.

Contractor to verify these minimum conditions can be met prior to the beginning of installation. If the conditions can not be met, the contractor must notify the designer prior to proceeding with the work. If the contractor does not do so, the contractor proceeds at their own risk and becomes responsible for any future work required to make the system perform as required.

#### THE PIPE

Pipe locations shown on the plan are schematic and shall be adjusted in the field. When laying out mainlines place a maximum of 18" away from either the back of curb, front of walk, back of walk, or other hardscape to allow for ease in locating and protection from physical damage. Install all lateral pipe near edges of pavement or against buildings whenever possible to allow space for plant root balls. Always install piping inside project properties boundary.

All pipes are to always be placed in planting beds. If it is necessary to have piping under hardscapes, such as roads, walks, and patios, the pipes must be sleeved using Sch 40 PVC with the sleeve diameter being twice the size of the pipe it is carrying with a minimum sleeve size of 2".

Pipe sizes shall conform to those shown on the drawings. No substitutions of smaller pipe sizes shall be permitted, but substitutions of larger sizes may be approved. All damaged and rejected pipe shall be removed from the site at the time of said rejection.

Mainline shall be Class 200 gasketed '0' ring PVC with Hanco ductile iron fittings (sized per plans).

Contractor to ensure all mainline piping is properly restrained using mechanical joint fittings, restraining collars, threaded rods, thrust blocks, etc., as and where required. Contractor shall refer to pipe manufacturers recommended installation practices for further direction.

PVC pipe joint compound and primer: slow-drying, heavy duty cement and tinted (purple) primer that is compatible with the cement. The PVC cement shall be Weld-On Z711 grey and the primer shall be Weld-On P70 purple primer, or approved equals.

#### ELECTRICAL POWER SUPPLY

Electrical supply for pumps and controllers to be provided by irrigation contractor. Contractor to coordinate with local utilities for the installation of, and connection to, site available power supply's for required electrical components as set forth in the irrigation plans.

All electrical to comply with the National Electrical Code and any, and all, other applicable electrical codes, laws and regulations. A licensed electrician shall perform all electrical hook-ups. Power for the controller shall be 120 volt, 20 amp.

#### WRING

Irrigation control wire shall be thermoplastic solid copper, single conductor, low voltage irrigation controller wire, suitable for direct burial and continuous operation at rated voltages.

Tape and bundle control wires every 10' and run alongside the mainline. At all turns in direction make a 2' coil of wire. At all valve boxes coil wire around a 3/4" piece of PVC pipe to make a coil using 30 linear inches of wire. Make electrical connections with 3M-DBY,DBR connectors.

Number all wires, using an electrical book of numbers, according to the plans. Number wires in all valve boxes, junction boxes and at the controller.

Wire sized, numbered and colored as follows:

- #12 white for common
- #12 spare black common
- #14 red for hot wires
- #14 spare yellow hot wire

#### Spare wires

Run spare wires into every RCV valve box. Install a minimum of 2 common and 4 hot wires, in all directions, to every RCV connected to its respective controller.

Controller grounding - Contractor to utilize 4"X8"X5/8" copper grounding plates, 5/8"X10' copper clad grounding rods, 'One Strike' CAD wells at all connection points, #6 bare copper wire, and earth contact material. Install these and other required components as outlined in the detail. Contractor to verify that the earth to ground resistance does not exceed 10 ohms. Contractor shall provide a written certification, on a licensed electrical contractors letter head, showing the date of the test, controller location, and test results. Each controller shall be so grounded and tested.

#### LAYOUT

Lay out irrigation system mainlines and lateral lines. Make the necessary adjustments as required to take into account all site obstructions and limitations prior to excavating trenches.

Stake all sprinkler head locations. Adjust location and make the necessary modifications to nozzle types, etc. required to insure 100% head to head coverage. Refer to the Edge of Pavement Detail on the Irrigation Detail Sheet.

Spray heads shall be installed 4" from sidewalks or curbed roadways and 12" from uncurbed roadways and building foundations. Rotors shall be installed 4" from sidewalks or curbed roadways, 12" from building foundations, and 36" from uncurbed roadways.

Shrub heads shall be installed on 3/4" Sch 40 PVC risers. The risers shall be set at a minimum of 18" off sidewalks, roadway curbing, building foundations, and/or any other hardscaped areas. Shrub heads shall be installed to a standard height of 4" below maintained height of plants and shall be installed within planted masses to be less visible and offer protection. Paint all shrub risers with flat black or forest green paint, unless irrigation system will be installed from a reuse water system with purple PVC risers.

Locate valves prior to excavation. Insure that their location provides for easy access and that there is no interference with physical structures, plants, trees, poles, etc. Valve boxes must be placed a minimum of 12" and a maximum of 15" from the edge of pavement, curbs, etc. and the top of the box must be 2" above finish grade. No valve boxes shall be installed in turf areas without approval by the irrigation designer - only in shrub beds. Never install in sport field areas.

#### VALVES

Sequence all valves so that the farthest valve from the P.O.C. operates first and the closest to the P.O.C. operates last. The closest valve to the P.O.C. should be the last valve in the programmed sequence.

Adjust the flow control on each RCV to ensure shut off in 10 seconds after deactivation by the irrigation controller.

Using 3" high number stencils paint the valve number in white on the lid of each valve box.

#### EQUIPMENT

Bubblers shall be installed using Sch 80 nipples and shall be placed at the base of trees for low level watering.

All pop-up heads and shrub risers shall be pressure compensating. All pop-up heads shall be mounted on flex-type swing joints.

All sprinkler equipment not otherwise detailed or specified shall be installed as per manufacturer's recommendations and specifications, and according to local and state laws.

#### TRENCHING

Excavate straight and vertical trenches with smooth, flat or sloping bottoms. Trench width and depth should be sufficient to allow for the proper vertical and horizontal separation between piping as shown in the pipe installation detail on the detail sheet.

Protect existing landscaped areas. Remove and replant any damaged plant material upon job completion. The replacement material shall be of the same genus and species, and of the size of the material it is replacing. The final determination as to what needs to be replaced and the acceptability of the replacement material shall be solely up to the owner or owner's representative.

#### INSTALLATION

Cut all pipe square and deburr. Clean pipe and fittings of foreign material; then apply a small amount of primer while ensuring that any excess is wiped off immediately. Primer should not puddle or drip from pipe or fittings. Next apply a thin coat of PVC cement; first apply a thin layer to the pipe, next a thin layer inside the fitting, and finally another very thin layer on the pipe. Insert the pipe into the fitting. Insure that the pipe is inserted to the bottom of the fitting, then turn the pipe a 1/4 turn and hold for 10 seconds. Make sure that the pipe doesn't recede from the fitting. If the pipe isn't at the bottom of the fitting upon completion, the glue joint is unacceptable and must be discarded.

Pipes must cure a minimum of 30 minutes prior to handling and placing into trenches. A longer curing time may be required; refer to the manufacturer's specifications. The pipe must cure a minimum of 24 hours prior to filling with water.

#### BACK FILL

The Back fill 6" below and 6" above all piping shall be of clean sand and anything beyond that in the trench can be of native material but nothing larger than 2" in diameter.

Main line pipe depth measured to the top of pipe shall be 36" minimum, including at vehicular crossings.

Lateral line depths measured to top of pipe shall be:

- 18" minimum for 3/4"-3" PVC with a 30" minimum at vehicular crossings;
- 24" minimum for 4" PVC and above with a 30" minimum at vehicular crossings.

Contractor shall backfill all piping, both mainline and laterals, prior to performing any pressure tests. The pipe shall be backfilled with the exception of 2" on each side of every joint (bell fittings, 90's, tees, 45's, etc.). These joints shall not be backfilled until all piping has satisfactorily passed its appropriate pressure test as outlined below.

#### FLUSHING

Prior to the placement of heads, flush all lines for a minimum of 10 minutes or until lines are completely clean of debris, whichever is longer.

Use screens in heads and adjust heads for proper coverage avoiding excess water on walk, walks and paving

#### TESTING

Remove all remote control valves and cap using a threaded cap. Fill mainline with water and pressurize the system to 125 PSI. Monitor the system pressure at two gauge locations; the gauge locations must be at opposite ends of the mainline. With the same respective pressures, monitor the gauges for two hours. There can be no loss in pressure at either gauge for solvent-welded pipe. Gasketed piping shall lose no more water than allowed per the Florida State Building Code, Volume II Plumbing, Part VI, Appendix F. Refer to this section for the formula to be used to calculate the maximum allowable water loss during the testing time. If these parameters are exceeded, locate the problem; repair it; wait 24 hours and retry the test. This procedure must be followed until the mainline passes the test.

The lateral lines must be filled and visually checked for leaks. Any leaks detected must be repaired. No pressure test of the lateral lines is required.

Once the mainline and lateral lines have passed their respective tests, and the system is completely operational, a coverage test and demonstration of the system is required. The irrigation contractor must demonstrate to the owner, or his/her representative that proper coverage is obtained and that the system works automatically from the controller. This demonstration requires that each zone is turned on, in the proper sequence as shown on the plans, from the controller. Each zone will be inspected for proper coverage and function. The determination of proper coverage and function is at the sole discretion of the owner or owner's representative.

Operational Testing Upon completion of back filling, finish grading and contouring, test the entire system for proper operation; including electrically actuating the remote control valves. Run each zone until water begins to puddle or run off. This will allow you to determine the number of irrigation start times necessary to meet the weekly evapotranspiration requirements of the planting material in each zone. In sandy soils no puddling will occur, instead; calculate the required run times.

#### SUBMITTALS

The contractor must submit for approval, prior to installation, copies of the manufacturer's cut sheets/specifications for all components to be used in the irrigation system.

After project completion, and as a condition of final acceptance, the irrigation contractor shall provide the owner with a high quality, accurate, and legible set of as-built drawings. The as-builts must identify all remote control valves, gate valves, ball valves, splice boxes, controllers, mainline, alleys, and low voltage wiring. Each of these items is to be located using a submeter GPS system. The irrigation contractor must also provide accurate, informative, and easy to follow and understand operation and maintenance manuals for all components of the irrigation system.

Controller charts - Upon completion of "as-built" prepare controller charts; one per controller. Indicate on each chart the area controlled by a remote control valve (using a different color for each zone). This chart shall be reduced to a size that will fit inside of the controller door. The reduction shall be hermetically sealed inside two 2ml pieces of clear plastic.

Furnish extra materials described below that match products installed and that are packaged with protective covering for storage and identified with labels describing contents. Include tools to service these products.

1. Sprinkler Units: Five of each unit for each type and size installed, but no fewer than two units.
2. Emitter Units: Five of each unit for each type and size installed, but no fewer than two units.
3. Drip Tube Units: Five of each unit for each type and size installed, but no fewer than two units.

#### FINAL ACCEPTANCE

Final acceptance of the irrigation system will be given after the following documents and conditions have been completed and approved. Final payment will not be released until these conditions are satisfied.

1. Final walk-thru and correction of all punch list items.
2. Completion and acceptance of 'as-built' drawings.
3. Acceptance of required controller charts and placement inside of controllers.
4. Turn over of all required parts and tools as outlined in the project specifications.

GUARANTEE: The irrigation systems shall be guaranteed for a minimum of one calendar year from the time of final acceptance.

#### MINIMUM RECOMMENDED IRRIGATION MAINTENANCE PROCEDURES

1. Every Irrigation zone should be checked monthly and written reports generated describing the date(s) each zone was inspected, problems identified, date problems repaired, and a list of materials used in the repair. At minimum, these inspections should include the following tasks:

- A. Turn on each zone from the controller to verify automatic operation.
- B. Check schedules to ensure they are appropriate for the season, plant and soil type, and irrigation method. Consult an I.A. certified auditor for methods used in determining proper irrigation scheduling requirements.
- C. Check remote control valve to ensure proper operation.
- D. Check setting on pressure regulator to verify proper setting, if present.
- E. Check flow control and adjust as needed, ensure valve closure within 10-15 seconds after deactivation by controller.
- F. Check for leaks - mainline, lateral lines, valves, heads, etc.
- G. Check all heads as follows:

1. Proper set height (top of sprinkler is 1" below mow height)
2. Verify head pop-up height - 6" in turf, 12" in ground cover, and pop-up on riser in shrub beds.
3. Check wiper seal for leaks - if leaking, clean head and re-inspect. If still leaking, replace head with the appropriate head with pressure regulator and built-in check valve.
4. All nozzles checked for proper pattern, clogging, leaks, correct make & model, etc. - replace as needed.
5. Check for proper alignment - perfectly vertical; coverage area is correct; minimize overspray onto hardscapes.
6. Riser height raised/lowered to accommodate plant growth patterns and ensure proper coverage.
7. verify the pop-up riser retracts after operation. If not, repair/replace as needed.

2. Check controller/C.C.U. grounds for resistance (10 ohms or less) once per year. Submit written reports.

3. Check rain shut-off device monthly to ensure it functions properly.

4. Inspect all filters monthly and clean/repair/replace as needed.

5. Inspect backflow devices-by utilizing a properly licensed backflow-inspector. This should be done annually, at minimum.

6. Inspect all valve boxes to ensure they are in good condition, lids are in place and locked.

7. Check pump stations for proper operation, pressures, filtration, settings, etc. - refer to pump station operations manual.

8. Check and clean intake screens on all suction lines quarterly, at minimum. Clean and/or repair, as needed.

9. Winterize, if applicable, as weather in your area dictates. Follow manufacturer recommendations and blow out all lines and equipment using compressed air. Perform seasonal startup of system as per manufacturer recommendations.

10. Conduct additional inspections, maintenance tasks, etc. that are particular for your site.

#### IRRIGATION NOTES

MAR 11 2006

2101 Centrepark West Drive, Suite 100  
West Palm Beach, FL 33409  
561-478-8501

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FILE #: 710.13

DATE: 08/10/05

REVISED: 12/13/05

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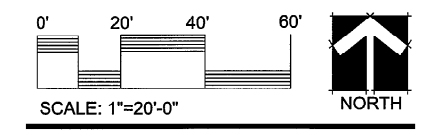
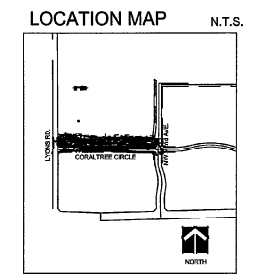
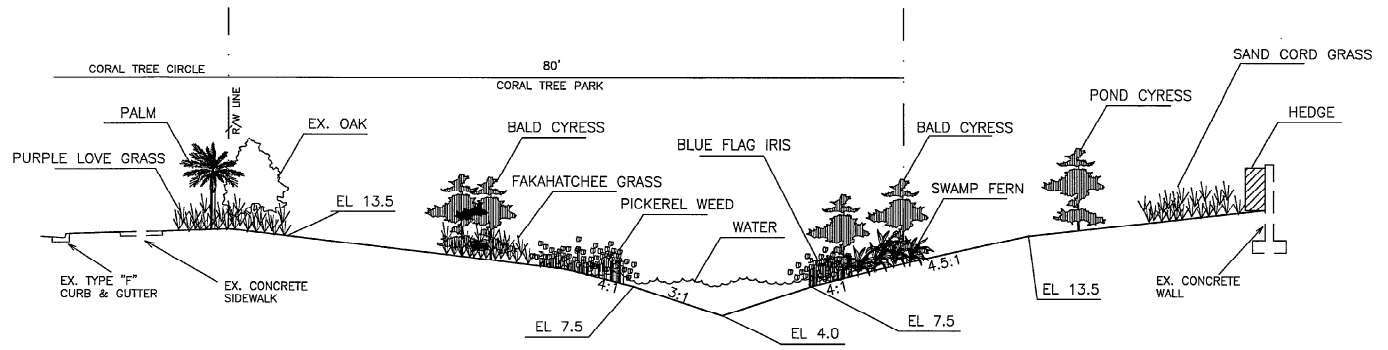
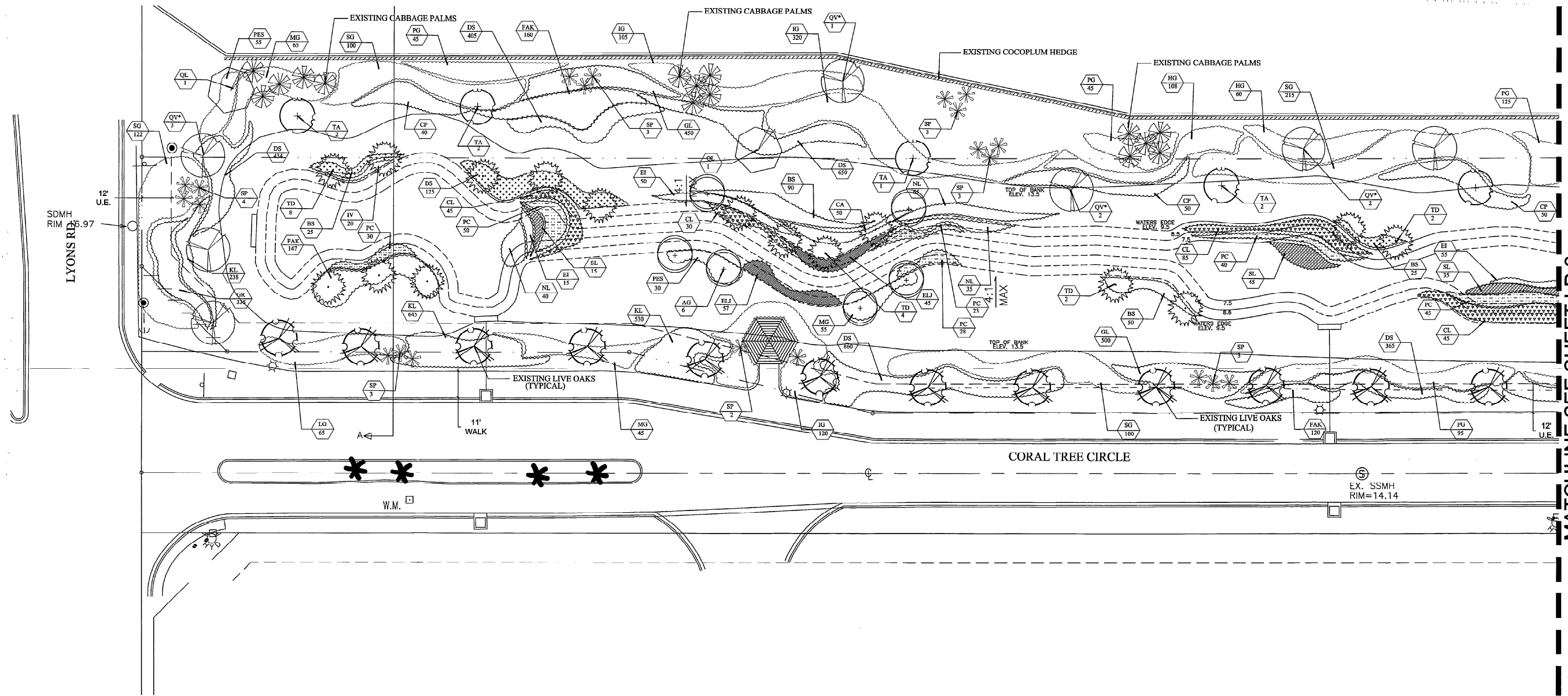
**CORAL TREE LINEAR PARK**  
PREPARED FOR TOWN & COUNTRY BUILDERS, INC.  
CITY OF COCONUT CREEK, FLORIDA

**GREENWAY  
LANDSCAPE  
PLAN**

2101 Centrepark West Drive, Suite 100  
West Palm Beach, FL 33409  
561-478-8501

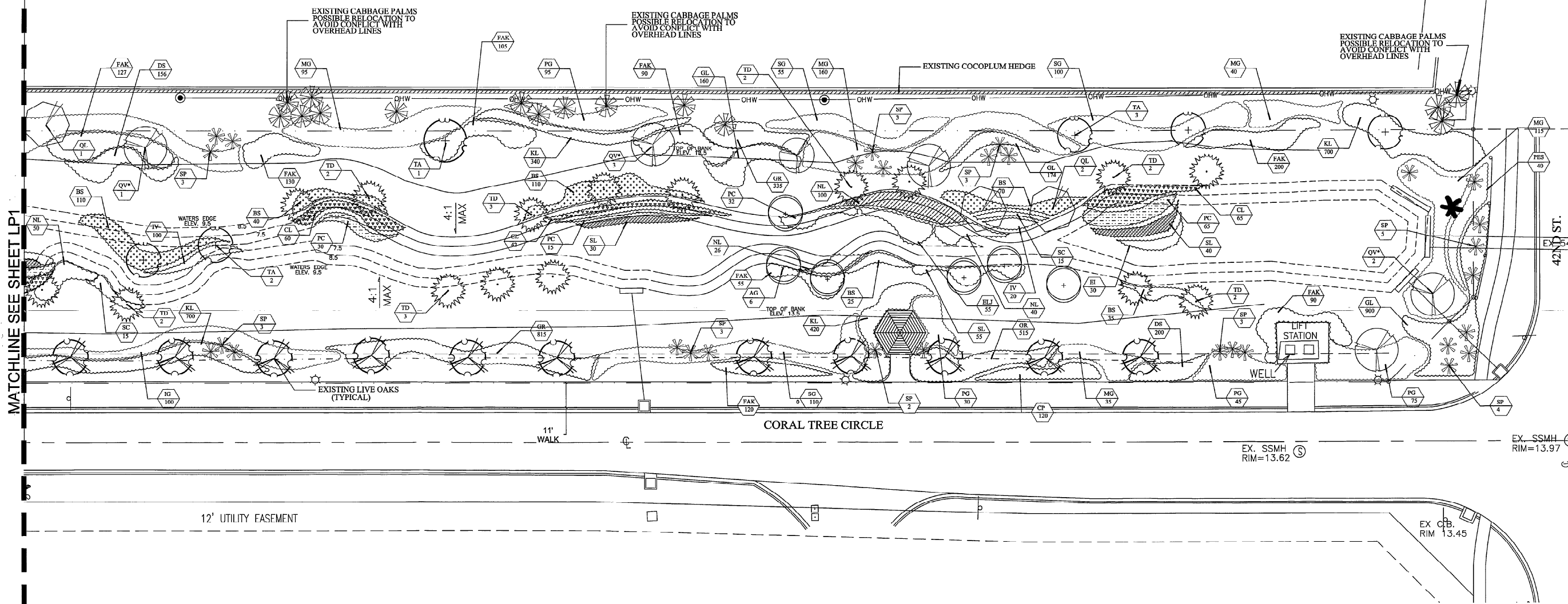
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REVISED: 7/26/05

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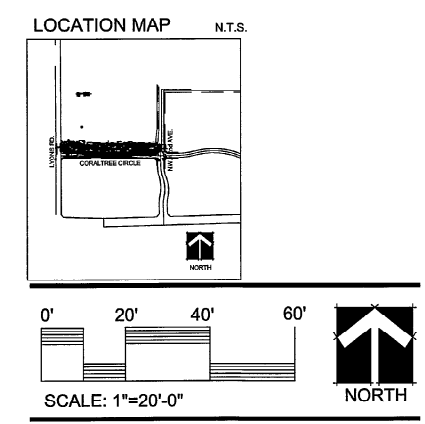
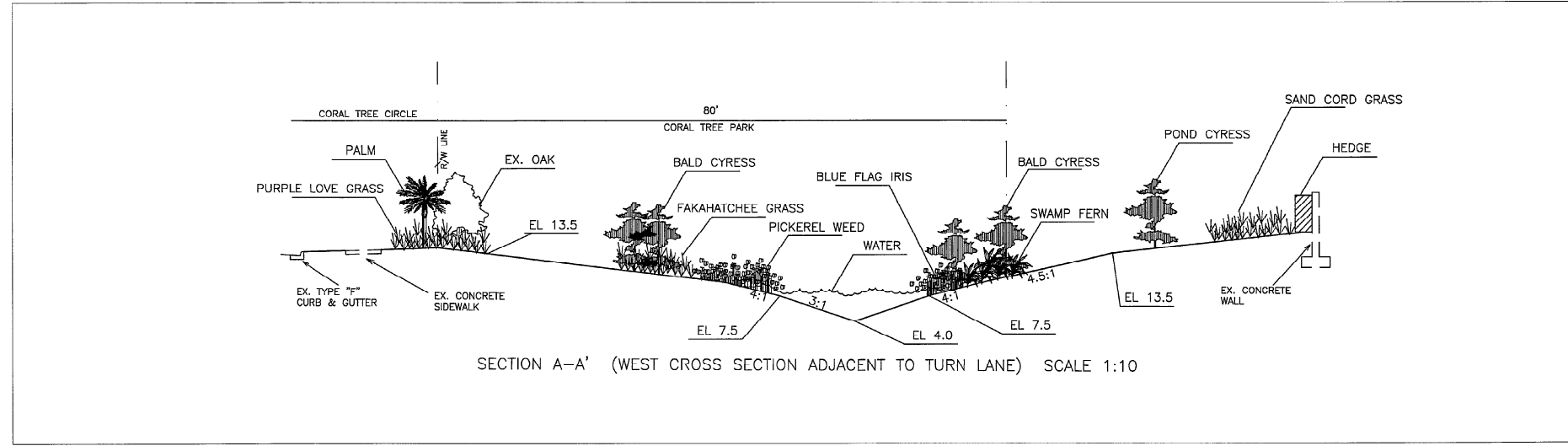




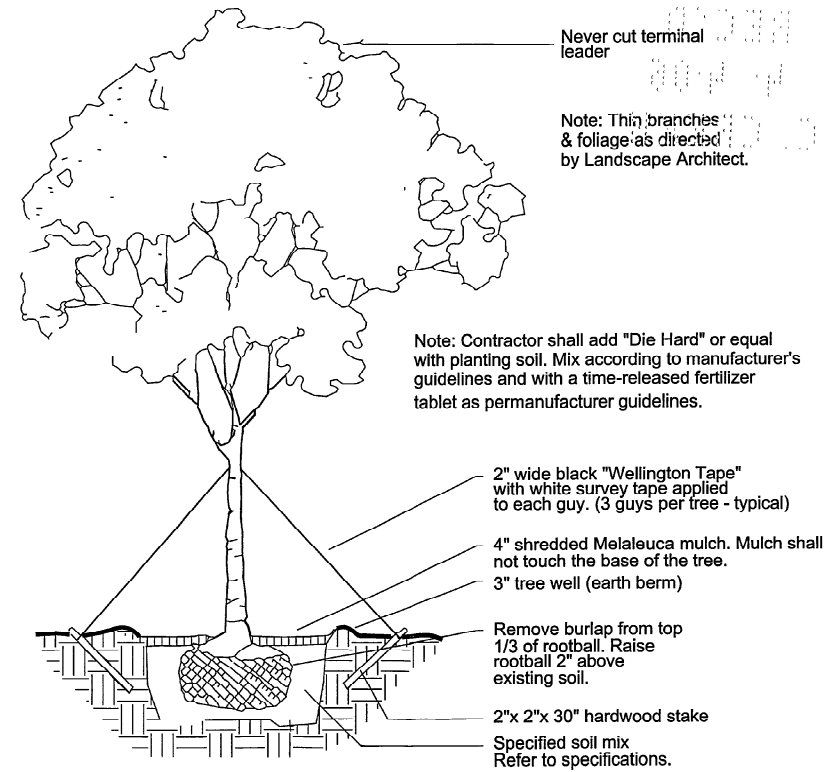
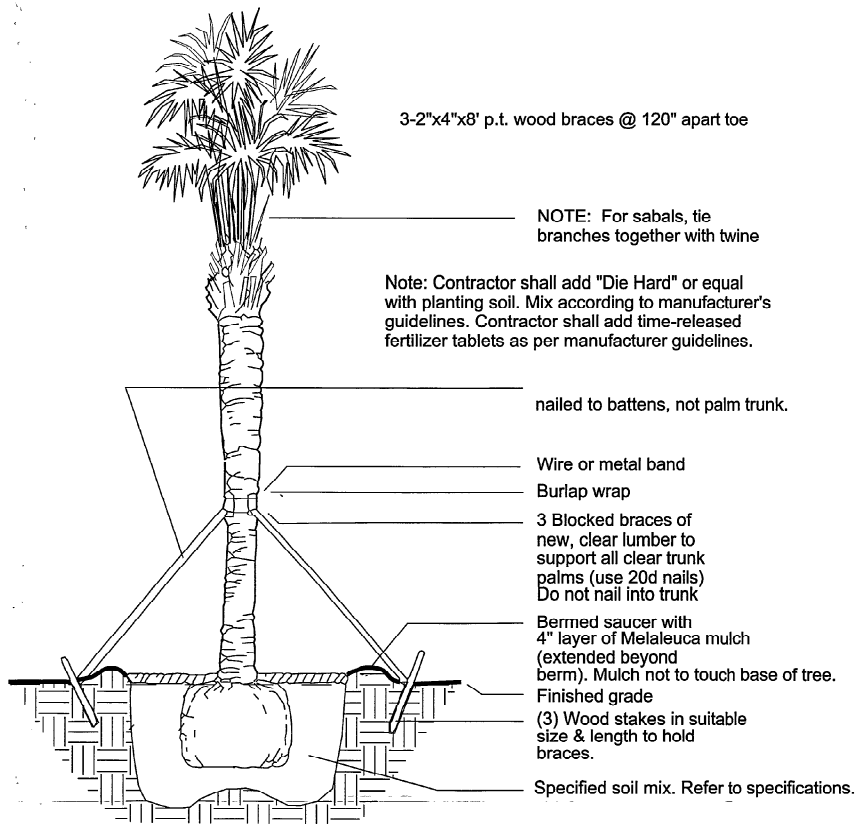
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CITY OF COCONUT CREEK, FLORIDA



MATCHLINE SEE SHEET LP1



**GREENWAY  
LANDSCAPE  
PLAN**  
MAY 12 2006  
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West Palm Beach, FL 33409  
561-478-8501  
SCALE: 1" = 20'-0"  
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DRAWING #: 710.13.greenway.7-20-05  
FILE #: 710.13  
DATE: 03/09/05  
REVISED: 7/26/05  
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**2 OF 4**



**PALM PLANTING DETAIL**

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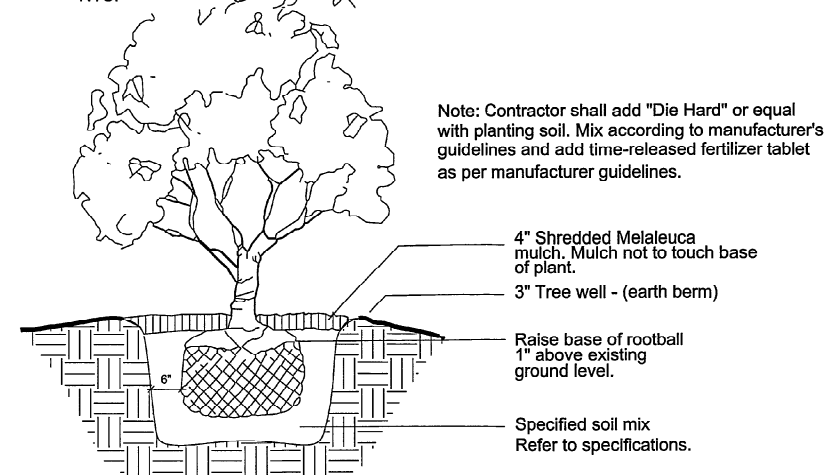
**P L A N T S C H E D U L E**

QTY	CODE	BOTANICAL NAME	COMMON NAME	SIZE & REMARK
<b>TREES</b>				
12	AG	Annona Glabra	Pond Apple	#15,8-10' OAH.
5	QL	Quercus laurifolia	Laurel Oak	B&B, 14' HT X 7' SPR
13	QV*	Quercus virginiana	Live Oak	Relocated from site
11	TA	Taxodium ascendens	Pond Cypress	B&B, 14' HT X 7' SPR
32	TD	Taxodium distichum	Bald Cypress	B&B, 14' HT X 7' SPR
<b>PALMS</b>				
50	SP	Sabal palmetto	Cabbage Palm	10-14' Ht, Booted Trunk
<b>GRASSES</b>				
1344	FAK	Tripsacum dactyloides	Fakahatchee Grass	#1, 36" o.c.
645	IG	Sorghastrum nutans	Indian Grass	#1, 36" o.c.
168	HG	Deschampsia caespitosa 'Goldgehaenge'	Hair grass	#1, 36" o.c.
65	LG	Eragrostis spectabilis	Purple Love grass	#1, 36" o.c.
610	MG	Muhlenbergia capillaris	Muhly Grass	#1, 36" o.c.
130	PES	Pennisetum setaceum	Red Fountain Grass	#1, 36" o.c.
555	PG	Cortaderia richardii	Pampas Grass	#1, 36" o.c.
802	SG	Spartina pectinata	Sand Cord Grass	#1, 36" o.c.
<b>LITTORAL</b>				
705	BS	Blechnum serrulatum	Swamp Fern	2' o.c., Bare root
50	CA	Crinum americanum	Swamp Lily	2' o.c., Bare root
372	CL	Canna laccida	Golden Canna	2' o.c., Bare root
150	EI	Eleocharis interstincta	Spike Rush	2' o.c., Bare root
157	ELJ	Juncas effusus	Black Rush	2' o.c., Bare root
140	IV	Iris virginicus	Blue Flag Iris	2' o.c., Bare root
356	NL	Nuphar luteum	Spatterdock	2' o.c., Bare root
358	PC	Pontederia cordata	Pickerel Weed	2' o.c., Bare root
30	SC	Sagittaria lancifolia	Duck Potato	2' o.c., Bare root
220	SL	Saururus cernuus	Lizard's Tail	2' o.c., Bare root
<b>WILD FLOWERS</b>				
3070	DS	Helianthus debilis	Dune Sunflower	#1, 12" O.C.
2184	GL	Gaillardia aristata	Gaillardia	#1, 12" O.C.
2000	GR	Solidago sempervirens	Sea Side Goldenrod	#1, 12" O.C.
3573	KL	Coreopsis tinctoria	Tick seed	#1, 12" O.C.
<b>GROUND COVER</b>				
260	CP	Zamia furfuracea	Card Board Palm	#3, 16" x 24", 36"O.C.

- Notes: -Mulch all planting beds with +3" Melaleuca mulch.  
 -Removal of existing vegetation is responsibility of Landscape Contractor (LC).  
 -Relocation of existing vegetation is responsibility of LC. See Landscape Architect (LA) for planting instructions and locations.  
 -In case of quantity discrepancies plan takes precedence over plant list.  
 -Landscape contractor to contact Landscape Architect (LA) if material is not available as specified in plans.  
 -Landscape Contractor (LC) responsible for verification of all quantities prior to bidding.  
 -All landscaping and above ground structures shown hereon are designed and are to be installed and maintained in accordance with Palm Beach County streetscape standard manual.

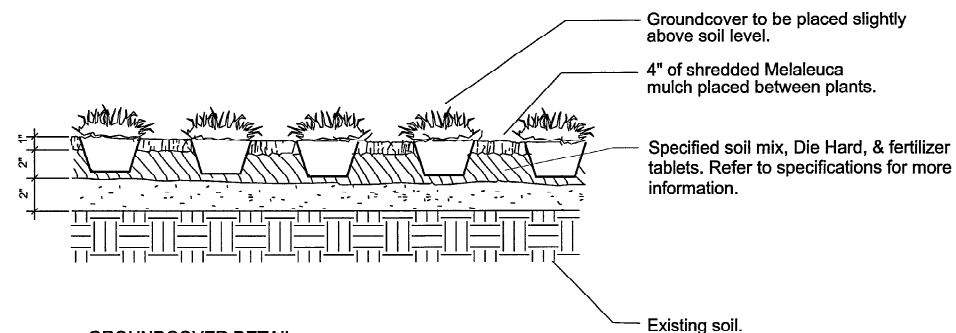
**TREE PLANTING DETAIL**

NTS.



**SHRUB PLANTING DETAIL**

NTS.



**GROUND COVER DETAIL**

NTS.



**CORAL TREE LINEAR PARK**  
 PREPARED FOR TOWN & COUNTRY BUILDERS, INC.  
 CITY OF COCONUT CREEK, FLORIDA

**PLANTING DETAILS**

2101 Centrepark West Drive, Suite 100  
 West Palm Beach, FL 33409  
 561-478-8501

SCALE: 1" = 20'-0"  
 DRAWN BY: MDS  
 DRAWING #: 710.13\_greenway.7-20-05  
 FILE #: 710.13  
 DATE: 03/09/05  
 REVISED: 7/26/05



Part I GENERAL

1.01 Work Included

- A. Extent of Planting work is shown on drawings and in schedules.
- B. Subgrade Elevations: Excavation, filling and grading required to establish elevations 4" lower than elevations and contours shown on drawings are not specified in this Section.
- C. Finish Grade Elevations: 1 inch below top of pathway edging.

1.02 QUALITY ASSURANCE

- A. Subcontract landscape work to a single firm specializing in landscape work.
- B. Source Quality Control:
  - 1. General: Ship landscape materials with certificates of inspection required by governing authorities. Comply with regulations applicable to landscape materials.
  - 2. Do not make substitutions. If specified landscape material is not obtainable, submit to Landscape Architect proof of non-availability and proposal for use of equivalent material. When authorized, adjustment of contract amount will be made.
  - 3. Analysis and Standards: Package standard products with manufacturer's certified analysis. For other material, provide analysis by recognized laboratory made in accordance with methods established by the Association of Official Agricultural Chemists, wherever applicable.
  - 4. Trees, Palms and Shrubs: Provide trees, palms and shrubs grown in a recognized nursery in accordance with good horticultural practice. Provide healthy, vigorous stock free of disease, insects, eggs, larvae, and defects such as decay, knots, sun-scald, injuries, abrasions or discoloration. Provide trees, palms and shrubs for grade needed as outlined under Grades and Standards for Nursery Plants, State Plant Board of Florida, unless otherwise noted.
    - a. Sizes: Provide trees and shrubs of sizes shown or specified. Trees, palms and shrubs of larger size may be used if acceptable to Landscape Architect, and if sizes of roots or balls are increased proportionately.
- C. Inspection: Landscape Architect reserves right to inspect trees, palms and shrubs either at place of growth or at site before planting, for compliance with requirements for name, variety, size and quality.

1.03 SUBMITTALS

- A. Certification: Submit certificates of inspection as required by governmental authorities, and manufacturer's or vendor's certified analysis for soil amendments and fertilizer materials. Submit other data substantiating that materials comply with specified requirements.
- B. Submit seed vendor's certificate statement for each grass seed mixture required, stating botanical and common name, percentage by weight, and percentage of purity, germination, and weed seed for each grass seed species.
- C. Planting Schedule: Submit planting schedule showing schedules dates for each type of planting in each area of site.
- D. Maintenance Instructions: Submit typewritten procedures for maintenance of landscape work.

1.04 DELIVERY, STORAGE AND HANDLING

- A. Packaged Materials: Deliver packaged materials in original containers showing weight analysis and name of manufacturer. Protect materials from deterioration during delivery, and while stored at site.
- B. Sod: Time delivery so that sod will be placed within 24 hours after stripping. Protect sod against drying and breaking of rolled strips.
- C. Trees, palms and shrubs: Provide freshly dug trees, palms and shrubs. Do not prune prior to delivery. Do not bend or bind trees or shrubs in such a manner as to damage bark, break branches or destroy natural shape. Provide protective covering during delivery.
- D. Deliver trees, palms and shrubs after preparations for planting have been completed and plant immediately. If planting is delayed more than 6 hours after delivery, set trees and shrubs in shade, protect from weather and mechanical damage, and keep roots moist.

- E. Do not remove container grown stock from containers until planting time.

- F. Label at least one tree, one palm and one shrub of each variety with a security attached waterproof tag bearing legible designation of botanical and common name.

1.05 JOB CONDITIONS

- A. Proceed with and complete landscape work as rapidly as portions of site become available.
- B. Utilities: Determine location of underground utilities and perform work in a manner which will avoid possible damage. Hand excavate, as required. Maintain grade stakes set by others until removal is mutually agreed upon by parties concerned.

- C. Excavation: When conditions detrimental to plant growth are encountered, such as rubble fill, adverse drainage conditions, or obstructions, notify Landscape Architect before planting.

- D. Planting Schedule: Where applicable, prepare a proposed planting schedule. Schedule dates to establish a logical sequence for completing each type of landscape work to avoid damage to other landscape work and work performed by other disciplines. Correlate with specified maintenance periods to provide maintenance from date of substantial completion. Once accepted, revise dates only as approved in writing, after documentation of reasons for delays.

- E. Coordination with Lawns: Plant trees, palms and shrubs after final grades are established and prior to planting of lawns, unless otherwise acceptable to Landscape Architect. If planting of trees, palms and shrubs occurs after lawn work, protect lawn areas and promptly repair damage to lawns resulting from planting operations.

1.06 SPECIAL PROJECT WARRANTY

- A. Warrant lawns through specified maintenance period, and until final acceptance. The required period is one full year following installation of lawn areas.
- B. Warrant trees for a period of one year after date of substantial completion against defects including death and satisfactory growth, except for defects resulting from neglect by Owner, abuse or damage by others, or unusual phenomena or incidents which are beyond Landscape Contractor's control.
- C. Warrant shrubs for 1 full year after date of substantial completion.
- D. Remove and replace trees, shrubs or other plants found to be dead or in unhealthy condition during warranty period. Make replacements during growth season following end of warranty period. Replace trees and shrubs which are in doubtful condition at end of warranty period, unless, in opinion of

Part 2 PRODUCTS

2.01 TOPSOIL

- A. If topsoil is not available on site, it must be furnished as specified. Throughout all parts of site

where finish grades and contour lines differ from existing contour lines, bring to finish grade contours shown on "Grading Plan."

- B. Topsoil shall be friable fertile soil with representative characteristics of area soils. It should be free of heavy clay, silt, stone, extraneous lime, plant roots and other foreign matter greater than 1 1/2" in diameter. It shall not contain noxious plant growth "such as bermuda or nut grass". It shall test in neutral pH range of 5.0 to 6.75 and contain no toxic substance that can be deemed to impede plant growth. The contractor shall be prepared to have soil lab-tested at his expense by the Landscape Architect. Topsoil shall comply with the following quantitative analysis.

Components	Volume Measure	Particle Size
Organic Matter	3 - 5%	
Silt	10 - 30 %	.05 to .002 MM
Sand	25 - 75%	.02 to .05 MM
Clay	5 - 25%	.002 MM and below

2.02 SOIL AMENDMENTS

- If necessary to bring soil into above specified limits:

- A. Lime: Natural limestone (Dolomite) containing not less than 85% of total carbonates, ground so that not less than 90% passes a 10-mesh sieve and not less than 50% passes a 100-mesh sieve.
- B. Peat Humus or Peat Moss: Texture, moisture and pH range suitable for intended use.
- C. Commercial Fertilizer: Complete fertilizer of neutral character, with 40% - 50% of the total nitrogen in a water insoluble form. It shall be uniform in composition, dry and free flowing.
  - 1. For trees, palms and shrubs, provide fertilizer with not less than 6% available phosphoric acid, 6% nitrogen and 6% soluble potash.
  - 2. For lawns, provide fertilizer with not less than 6% phosphoric acid, and 6% potassium, and percentage of nitrogen required to provide not less than 1 lb. of actual nitrogen per 1000 square feet of lawn area. Provide nitrogen in a form that will be available to lawn during initial period of growth.

2.03 PLANT MATERIALS

- A. Plant list is part of this specification section.
- B. Quality: Trees, palms, shrubs and other plants shall conform to the standards for Florida #1 or better as given in the latest edition of Grades and Standards for Nursery Plants, State Plant Board of Florida.
- C. Deciduous Trees: Provide trees of height and collar listed or shown and with branching configuration for Florida #1 or better graded trees in Grades and Standards for Nursery Plants for type and species required. Provide single stem trees except where special forms are shown or listed. Call condition variable.

- D. Coniferous and Broadleaved Evergreens: Provide evergreens of sizes shown or listed. Dimensions indicate minimum height and spread. Provide specified quality evergreens with well-balanced form complying with requirements for other size relationships to the primary dimension shown.

2.04 GRASS MATERIAL

- A. Grass Seed: Provide fresh, clean, new-crop seed complying with established tolerance for purity and germination. Provide seed of grass species, proportions and minimum percentages of purity, germination, and maximum percentage of weed seed, as

2.05 MISCELLANEOUS LANDSCAPE MATERIALS

- A. Ground Cover: Provide plants established and well-rooted in removable containers or integral peat pots and with not less than minimum number and length of runners specified.
- B. Anti-Erosion Mulch: Provide clean, dry, mulching hay or straw of coastal bermuda, pangola or bahia grass. Only underlabeled mulch which can be readily cut into the soil shall be used.
- C. Mulch: Varies by region and availability.
- D. Stakes and Guys: When required provide stakes and deadmen of sound new hardwood, treated softwood, or redwood, free of knot holes and other defects. Provide wire ties and guys of 3-strand, twisted, pliable galvanized iron wire not lighter than 12 ga. with zinc-coated turnbuckles. Provide not less than 1/2" hose, cut to required lengths to protect tree trunks from damage by wires.

Part 3 EXECUTION

3.01 LAYOUT

- A. Layout individual tree and shrub locations and areas for multiple plantings. Stake locations and outline areas and secure Landscape Architect's acceptance before start of planting work. Make adjustments as may be requested.

3.02 PREPARATION OF PLANTING SOIL

- A. Before mixing, clean topsoil of roots, plants, sods, stones, clay lumps, and other extraneous materials harmful or toxic to plant growth.
- B. Mix specified soil amendments and fertilizers with topsoil at rates specified. Delay mixing of fertilizer if planting will not follow placing of planting soil within a few days.
- C. For planting beds, six planting soil onliner prior to planting or apply on surface of topsoil and mix thoroughly before planting.
  - 1. Mix lime with dry soil prior to mixing fertilizer.
  - 2. Prevent lime from contacting roots of acid-loving plants.

3.03 PREPARATION FOR PLANTING LAWNS

- A. Preparation of Unchanged Grades: Where lawns are to be planted in areas that have not been altered or disturbed by excavation, grading, or striping operations, prepare soil for lawn planting as follows: Till to a depth of not less than 6"; apply soil amendments and initial fertilizers; remove high areas and fill in depressions; till soil to a homogeneous mixture of fine texture, free of lumps, clods, stones, roots and other extraneous matter.
  - 1. Prior to preparation of unchanged areas, remove existing grass, vegetation and turf. Dispose of such material outside of Owner's property; do not turn over into soil being prepared for lawns.
- B. Elsewhere: Loosen subgrade of lawn areas to a minimum depth of 4". Remove stones over 1 1/2" in any dimension and sticks, roots, rubbish and other extraneous matter. Limit preparation to areas which will be planted promptly after preparation.
  - 1. Spread planting soil mixture to minimum depth required to meet lines, grades and elevations shown, after light rolling and natural settlement.
  - 2. Place approximately 1/2 of total amount of planting soil required. Work into top of loosened subgrades to create a transition layer and then place remainder of planting soil.
  - 3. Allow for sod thickness in areas to be sodded.
- C. Grade lawn areas to smooth, even surface with loose, uniformly fine texture. Roll and rake and remove ridges and fill depressions, as required to meet finish grades. Limit fine grading to areas which can be planted immediately after grading.
- D. Moisture prepared lawn areas before planting if soil is dry. Water thoroughly and allow surface moisture to dry before planting lawns. Do not create a muddy soil condition.

- E. Restore lawn areas to specified condition if eroded or otherwise disturbed after fine grading and prior to planting.

3.04 PREPARATION OF PLANTING BEDS

- A. Loosen subgrade of planting bed areas to a minimum depth of 10" using a cultimeter or similar equipment. Remove stones over 1 1/2" in dimension, and sticks, stones, rubbish and other extraneous matter. Spread planting soil mixture to minimum depth required to meet lines, grades and elevations shown, after light rolling and natural settlement. Place approximately 1/2 of total amount of planting soil required. Work into top of loosened subgrade to create a transition layer, then place remainder of the planting soil. Add soil amendment.

- B. Excavation for Trees and Shrubs: Excavate pits, beds and trenches with vertical sides and with bottom of excavation slightly raised at center to provide property drainage. Loosen hard subsoil in bottom of excavation.

- 1. For balled and burlapped (B&B trees and shrubs), make excavations at least half again as wide as the ball diameter and equal to the ball depth, plus following allowances for setting of ball on a layer of compacted backfill. Allow for 3" setting layer of planting soil mixture. (See planting details)
- 2. For container grown stock, excavate as specified for balled and burlapped stock, adjusted to size of container width and depth.

- C. Dispose of subsoil removed from landscape excavations. Do not mix with planting soil or use as backfill. Fill excavation for trees and shrubs with water and allow to percolate out before planting.

3.05 PLANTING TREES, PALMS AND SHRUBS

- A. Lay out individual tree, palm and shrub locations and areas for multiple plantings where required. Stake locations and outline areas and secure Landscape Architect's acceptance before start of planting work. Make adjustments as may be required.
- B. Set balled and burlapped (B&B) stock on layer of compacted planting soil mixture, plump and in center of pit or trench with top of ball at same elevation as adjacent finished landscape grades. Remove burlap from sides of balls; retain on bottoms. When set, place additional backfill around base and sides of ball, and work each layer to settle backfill and eliminate voids and air pockets. When excavation is approximately 2/3 full, water thoroughly before placing remainder of backfill. Repeat watering until no more is absorbed. Water again after placing final layer of backfill.
- C. Set container grown stock as specified for balled and burlapped stock, except cut cans on 2 sides with an approved can cutter; remove bottoms of wooden boxes after partial backfilling so as not to damage root balls.
- D. Dish top of backfill to allow for mulching.
- E. Mulch pits, trenches and planting areas. Provide not less than following thickness of mulch and work into top of backfill and finish level layer of backfill.

3.06 PRUNING

- A. All pruning shall be done on the site before planting as directed by Landscape Architect. Pruning shall follow modern horticultural practices (Grades and Standards for Nursery Plants) and shall be done with approved tools designed for the purpose intended. Lopping, topping, or shearing of trees or shrubs will be grounds for rejecting the plants as unsuitable and not meeting the requirements. Damaged, scarred, frayed, split, or skinned branches, limbs or roots shall be pruned back to live wood nearest to the next sound outside lateral bud, branch, limb or root. The terminal leader or bud in all trees or shrubs shall be left intact and not removed unless damaged.
- B. Prune, thin out and shape trees and shrubs. Prune trees to retain required height and spread. Unless otherwise directed by Landscape Architect, do not cut tree leaders, and remove only injured or dead branches from flowering trees, if any. Prune shrubs to retain natural character.

3.07 SODDING NEW LAWNS

- A. Lay sod within 24 hours from time of stripping.
- B. Lay sod to form a solid mass with tightly fitted joints. Butt ends and sides of sod strips; do not overlap. Stagger strips to offset joints in adjacent courses. Work from boards to avoid damage to subgrade or sod. Tamp or roll tightly to ensure contact with subgrade. Work silted soil into minor cracks between pieces to sod; remove excess to avoid smothering of adjacent grass.
- C. Water sod thoroughly with a fine spray immediately after planting.

3.08 MAINTENANCE

- A. Begin maintenance immediately after planting.
- B. Maintain trees, palms, shrubs and other plants until final acceptance but in no case less than following period; 30 days after substantial completion of planting.

- C. Maintain trees, palms, shrubs and other plants by pruning, cultivating and weeding as required for healthy growth. Restore planting saucers. Tighten and repair stake and guy supports and reset trees and shrubs to property grades or vertical position as required. Restore or replace damaged wrappings; spray as required to keep trees and shrubs free of insects and disease.

- D. Remove and replace excessively pruned or mis-formed stock resulting from improper pruning.

- E. Maintain lawns for not less than the period stated below, and longer as required to establish an acceptable lawn.
  - 1. Sodded lawns, not less than 30 days after substantial completion.
  - 2. Seeded lawn, not less than 60 days after substantial completion.
- F. Maintain lawns by watering, fertilizing, weeding, mowing, trimming, and other operations such as rolling, regrading and replanting as required to establish a smooth, acceptable lawn, free of eroded or bare areas.

3.09 CLEANUP AND PROTECTION

- A. During landscape work, keep pavement clean and work area in an orderly condition.
- B. Protect landscape work and materials from damage due to landscape operations, operations by other contractors and trades and trespassers. Maintain protection during installation and maintenance periods. Treat, repair or replace damaged landscape work as directed.

3.10 INSPECTION AND ACCEPTANCE

- A. When landscape work is completed, including maintenance, Landscape Architect will, upon request, make an inspection to determine acceptability. Landscape work may be inspected for acceptance in parts agreeable to Landscape Architect, provided work offered for inspection is complete, including maintenance.
- B. Seeded lawns will be acceptable provided requirements, including maintenance, have been complied with, and healthy, uniform close stand of specified grass is established, free of weeds, bare spots and surface irregularities (85% coverage required for acceptance).
- C. Sodded lawns will be acceptable provided requirements, including maintenance, have been complied with, and healthy, well-rooted, even-colored, viable lawn is established, free of weeds, open joints and bare areas (85% coverage required for acceptance). Where inspected landscape work does not comply with requirements, replace rejected work and continue specified maintenance until reinspected by Landscape Architect and found to be acceptable. Remove rejected plants and materials promptly from project site.



CORAL TREE LINEAR PARK  
 PREPARED FOR TOWN & COUNTRY BUILDERS, INC.  
 CITY OF COCONUT CREEK, FLORIDA

PLANTING SPECIFICATIONS

SCALE: 1" = 20'-0"  
 DRAWN BY: MDS  
 DRAWING #: 710.13\_greenway.7-20-05  
 FILE #: 710.13  
 DATE: 03/09/05  
 REVISED: 7/26/05

REC'D  
4-14-06  
CITY OF COCONUT CREEK

OFFICE COPY

CITY OF COCONUT CREEK, DEVELOPMENT SERVICES BROWARD COUNTY, FLORIDA		
INSPECTIONS	APPROVED BY	DATE
ZONING		
LANDSCAPING	<i>RF</i>	<i>9-13-06</i>
ENGINEERING		
FIRE		
STRUCTURAL		
ELECTRICAL		<i>4-11-06</i>
PLUMBING	<i>J.B. JAMES</i>	<i>3/22/06</i>
MECHANICAL		
PERMIT # <i>06001509</i> DATE <i>4/10/06</i>		
<small>NOTE: THIS PERMIT EXPIRES IF CONSTRUCTION IS NOT BEGUN WITHIN 60 DAYS OF ISSUE. PLANS MUST BE ON JOB BEFORE ANY ADE.</small>		

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06001509 - Tartan  
4400 Coral Tree Circle  
City of C.Ck./Dixie Lsp  
Lsp.irrig.-CoralTree Linear Park