



Legislation Text

File #: AT2016-382, Version: 1

ADMINISTRATIVE TRANSMITTAL

DATE: November 3, 2016

**TO: Mayor Gerwig
Vice Mayor McGovern
Councilman Drahos
Councilman Napoleone
Councilwoman Siskind**

FROM: Tom Lundeen

THRU: *Paul*
Paul Schofield

**CC: Senior Staff
Legal
Rachel Callovi**

RE: Stribling Way/Fairlane Farms Road Round-a-Bout Landscaping and Irrigation Project

A formal bid (construction documents and specifications) for the Stribling Way/Fairlane Farms Road Round-a-Bout Landscaping and Irrigation project was released on August 7, 2016 and advertised in the Palm Beach Post as well as on Demandstar and the Village's website. No bids were received by the due date of August 29, 2016.

Based on landscaping and irrigation plans (less formal documents and specifications) prepared by the Engineering Department in coordination with our Landscape/Forestry Operations Supervisor and the Planning and Zoning Manager and in compliance with Florida Power and Light's list of trees suitable for planting under transmission lines, a Request for Quotations was released on Demandstar and the Village's website on September 16, 2016. Three quotations were received on September 28, 2016 and are summarized below:

Next Era Landscaping

\$34,874.58

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Landscape Service Professionals	\$46,466.58
A Cut Above Landscaping	\$55,709.78

Copies of the Landscape and Irrigation Plans, bid tabulation for quotes received on September 28, 2016 and the referenced FP&L list of trees are attached for reference.

The Engineering Department is recommending that the Stribling Way/Fairlane Farms Road Round-a-Bout Landscaping and Irrigation project be awarded to Next Era Landscaping in the amount of \$34,874.58. An agenda item will be forthcoming for this project. .

Request for Quotes #1-16 - Landscape & Irrigation Improvements Project

	Item Description	Specifications	Estimated Quantity	Unit of Measure	Landscape Service Professionals		A Cut Above Landscape		Next Era Landscaping		
					Unit Price	Total For Item	Unit Price	Total For Item	Unit Price	Total For Item	
Irrigation											
1	F&I 1" Remote Control Valve, Ball Valve, & Valve Box Per Specifications (Includes wiring, connectors and control cable)	Per Specification 2.1, 2.4, 2.5, 2.6, 2.7, 2.10 and 2.11 (Sheet I-2)	5	EA	\$850.00	\$4,250.00	\$825.00	\$4,125.00	\$185.00	\$925.00	
2	F&I 2" Remote Control Valve, Ball Valve, & Valve Box Per Specifications	Per Specification 2.1, 2.4, 2.5, 2.6, 2.7, 2.10 and 2.11 (Sheet I-2)	1	EA	\$850.00	\$850.00	\$975.00	\$975.00	\$250.00	\$250.00	
3	F&I Control Equipment	Per Specification 2.1, 2.12 (Sheet I-2)	1	EA	\$9,250.00	\$9,250.00	\$14,300.00	\$14,300.00	\$7,800.00	\$7,800.00	
4	F&I Rain Bird Rotor Heads and 1/2" Flex Pipe (Includes Swing Joints and Risers)	Per Specification 2.1, 2.3 and 2.9 (Sheet I-2)	16	EA	\$20.00	\$320.00	\$60.00	\$960.00	\$26.00	\$416.00	
5	F&I Rain Bird Bubbler Heads and 1/2" Flex Pipe (Includes Swing Joints and Risers)	Per Specification 2.1, 2.3 and 2.9 (Sheet I-2)	22	EA	\$15.00	\$330.00	\$30.00	\$660.00	\$3.00	\$66.00	
6	F&I Schedule 40 PVC Lateral Line (Size Varies 3/4" - 1")	Per Specification 2.1 and 2.2 (Sheet I-2)	1200	LF	\$2.25	\$2,700.00	\$2.00	\$2,400.00	\$2.30	\$2,760.00	
7	F&I 2" Schedule 40 PVC Main Line	Per Specification 2.1 and 2.2 (Sheet I-2)	750	LF	\$6.75	\$5,062.50	\$4.00	\$3,000.00	\$2.50	\$1,875.00	
					Subtotal Irrigation:			\$22,762.50		\$26,420.00	\$14,092.00
Landscape											
8	F&I Ligustrum	HT=10FT; SP=10FT	12	EA	\$498.00	\$5,976.00	\$885.00	\$10,620.00	\$600.00	\$7,200.00	
9	F&I Triple Robellini Palm	HT=5-6FT; SP=10FT	14	EA	\$163.00	\$2,282.00	\$176.00	\$2,464.00	\$200.00	\$2,800.00	
10	F&I Creeping Juniper	3 GAL	230	EA	\$13.00	\$2,990.00	\$9.50	\$2,185.00	\$9.00	\$2,070.00	
11	F&I Ficus Hedge	HT=24"; 3 GAL	120	EA	\$11.00	\$1,320.00	\$8.54	\$1,024.80	\$6.25	\$750.00	
12	F&I Floritam Sod		390	SY	\$4.00	\$1,560.00	\$3.06	\$1,193.40	\$3.15	\$1,228.50	
13	F&I Cap-Rock	SIZE VARIES	130CY or 12EA	EA	\$15.00	\$1,950.00	\$142.50	\$1,710.00	\$135.00	\$1,620.00	
					Subtotal Landscape:			\$16,078.00		\$19,197.20	\$15,668.50
Miscellaneous											
14	Mobilization		1	LS	\$1,225.00	\$1,225.00	\$500.00	\$500.00	\$0.00	NC	
15	Clearing and Grubbing (including bahia sod removal)		1	LS	\$150.00	\$150.00	\$500.00	\$500.00	\$500.00	\$500.00	
16	Survey Layout / As-Builts		1	LS	\$50.00	\$50.00	\$750.00	\$750.00	\$150.00	\$150.00	
17	Maintenance of Traffic		1	LS	\$375.00	\$375.00	\$1,500.00	\$1,500.00	\$0.00	NC	
18	Contingency (Owner Controlled Allowance - 15% of items 1-13)		1	LS	\$5,826.08	\$5,826.08	\$6,842.58	\$6,842.58	\$4,464.08	\$4,464.08	
					Subtotal Miscellaneous:			\$7,626.08		\$10,092.58	\$5,114.08
					GRAND TOTAL ALL ITEMS:			\$46,466.58		\$55,709.78	\$34,874.58

BID TABULATION

Trees Suitable for Planting Under Transmission Lines South Region

The trees listed below are acceptable for planting under Transmission lines in USDA Hardiness Zones 9b – 11. The defining criterion is a mature height of less than fourteen (14) feet. Any vegetation that does not meet the fourteen (14) height limitation is not acceptable.

Chinese Photinia *Photinia serrulata*
American Elder *Sambucus canadensis*
Angel's Trumpet-tree *Brugmansia spp.*
Dwarf Poinciana *Caesalpinia pulcherrima*
Blackbead *Pithecellobium bahamensis*
Lemon Bottlebrush *Callistemon citrinus*
Spanish Stopper *Eugenia foetida*
Buccaneer Palm *Pseudophoenix sargentii*
Carolina Buckthorn *Rhamnus caroliniana*
Butterfly bush *Cassia bicapsularis*
Candlebrush *Cassia alata*
Orange Jasmine *Murraya paniculata*
Surinam Cherry *Eugenia uniflora*
Cocoplum *Chrysobalanus icaco*
'Comanche' Crape-myrtle *Lagerstroemia x 'Comanche'*
'Cherokee' Crape-myrtle *Lagerstroemia x 'Cherokee'*
'Acoma' Crape-myrtle *Lagerstroemia x 'Acoma'*
'Crape-Myrtlettes'
Dwarf Schefflera *Schefflera arboricola*
European Fan Palm *Chamaerops humilis*
Sparkleberry *Vaccinium arboreum*
Pineapple Guava *Feijoa sellowiana*
Fire-Cracker *Jatropha integerrima*
Florida Privet *Forestiera segregata*
Harlequin Gloryblower *Clerodendron trichotomum*
Round-Leaf Hawthorn *Raphiolepis umbellata*
Japanese Privet *Ligustrum japonicum*
Pygmy Date Palm *Phoenix roebelenii*
Key Thatch palm *Coccothrinax morrisii*
Pink Powderpuff *Calliandra surinamensis*
Powderpuff *Calliandra haematocephala*
Princess-Flower *Tibouchina urvilleana*

ACCEPTABLE TREES UNDER FPL TRANSMISSION LINES

RIGHT OF WAY USE - CUSTOMER GUIDELINES

Distributed On: 11/3/2016

Any use of FPL Right of Way requires a Right of Way Consent Agreement. FPL must have the capability at all times to construct, operate, maintain and restore its transmission and distribution facilities now located, or to be located, within its Rights-of-Way. Any use of FPL's Rights-of-Way by the underlying owner, or owner's assigns, which would prevent or unreasonably restrict FPL from performing these activities, or is considered by FPL as hazardous, is not allowed. Safety is a main concern, so the following guidelines are based on National Electrical Safety Code requirements, as well as good engineering principals and practices. These guidelines are general in nature and may vary in some instances depending upon construction type, easement terms, etc.

- I. The following activities, either temporary or permanent in nature, are **not** allowed within the limits of FPL's Rights-of-Way:
 - A. The placement of structures, buildings, mobile homes or trailers, recreational vehicles, satellite receiver systems, towers, swimming pools and associated equipment, cemetery sites, wells, septic tanks, storage tanks, dumpsters, trash, flammable material, building materials, disabled vehicles, motor boats, and sailboats.
 - B. Flooding all or any portion of the Right-of-Way.
 - C. Wet retention systems, ponds, and/or lakes.
 - D. Conservation easement and or mitigation areas.
 - E. The use of explosives
 - F. The attachment of signs or other items to FPL's facilities.
 - G. Any activity that might encourage or attract the public to participate in recreational activities which might cause an unsafe condition to exist.
 - H. Operating equipment capable of extending beyond a height of 14 feet above existing grade.
 - I. Storage of equipment capable of exceeding 14 feet in height.
 - J. The planting of trees, shrubs, plants, etc. capable of exceeding a height of 14 feet above existing grade at maturity, or containerized plants that would exceed a height of 14 feet above existing grade when lifted.
 - K. Fires of any kind, including the burning of any debris, except permitted controlled backing fire.
 - L. Required parking.
- II. A minimum 75 foot area clear of any activities, measured from each side of the centerline of the existing and/or planned pole(s)/structures, and a linear route (patrol road) 20 feet in width, with no more than 10:1 sloping, in an approved location within the easement, are required to ensure FPL vehicular access to its poles, guys, conductors and appurtenances and therefore can not be used for any purpose.
- III. The following activities **may** be allowable, but require an FPL consent agreement:
 - A. Excavation or buried facilities of any kind.
 - B. A change in the existing ground elevation.
 - C. Ditches crossing the Right-of-Way, must provide crossings that meet FPL specifications and are fully permitted by the appropriate jurisdictions.
 - D. Road crossings. Dropped curbing and median cuts of a minimum of 25 feet in width, and containing no more than 10:1 sloping, to be provided at locations designated by FPL.
 - E. Fencing, providing the fencing is grounded to FPL specifications, does not prohibit access to structures and 16 foot gates are installed in FPL's patrol/access areas and other locations designated by FPL. Gates must accommodate FPL locks.
 - F. Overflow parking is generally permitted. FPL's expansion and maintenance programs may require the use of a required parking space(s), thereby no longer allowing the requesting party to meet governmental parking requirements.
 - G. Spraying of pesticides provided it is done in a manner so as to prevent the spray from making contact with FPL's facilities.
 - H. Irrigation systems, provided they are constructed of a non-metallic material and do not extend beyond 14 feet above grade. Sprinkler heads must be set to prohibit spray from making contact with FPL facilities. Above-ground irrigation systems are not to be installed within or across FPL's patrol roads or access areas. Underground irrigation systems may cross patrol roads or access areas provided the system is buried a minimum depth of one foot below grade.

Owner is responsible to maintain the property according to the county ordinances which apply, including trash removal of dumped items, mowing and trimming existing trees to a height no higher than 14 feet.

To avoid unnecessary expense, it is recommended that a meeting be held with FPL in the early stages of planning a project to secure preliminary approval of conceptual plans. Final approval can only be obtained after FPL has been provided final construction plans. To arrange a meeting please refer to the FPL Consent Application Form for the necessary FPL contact information.

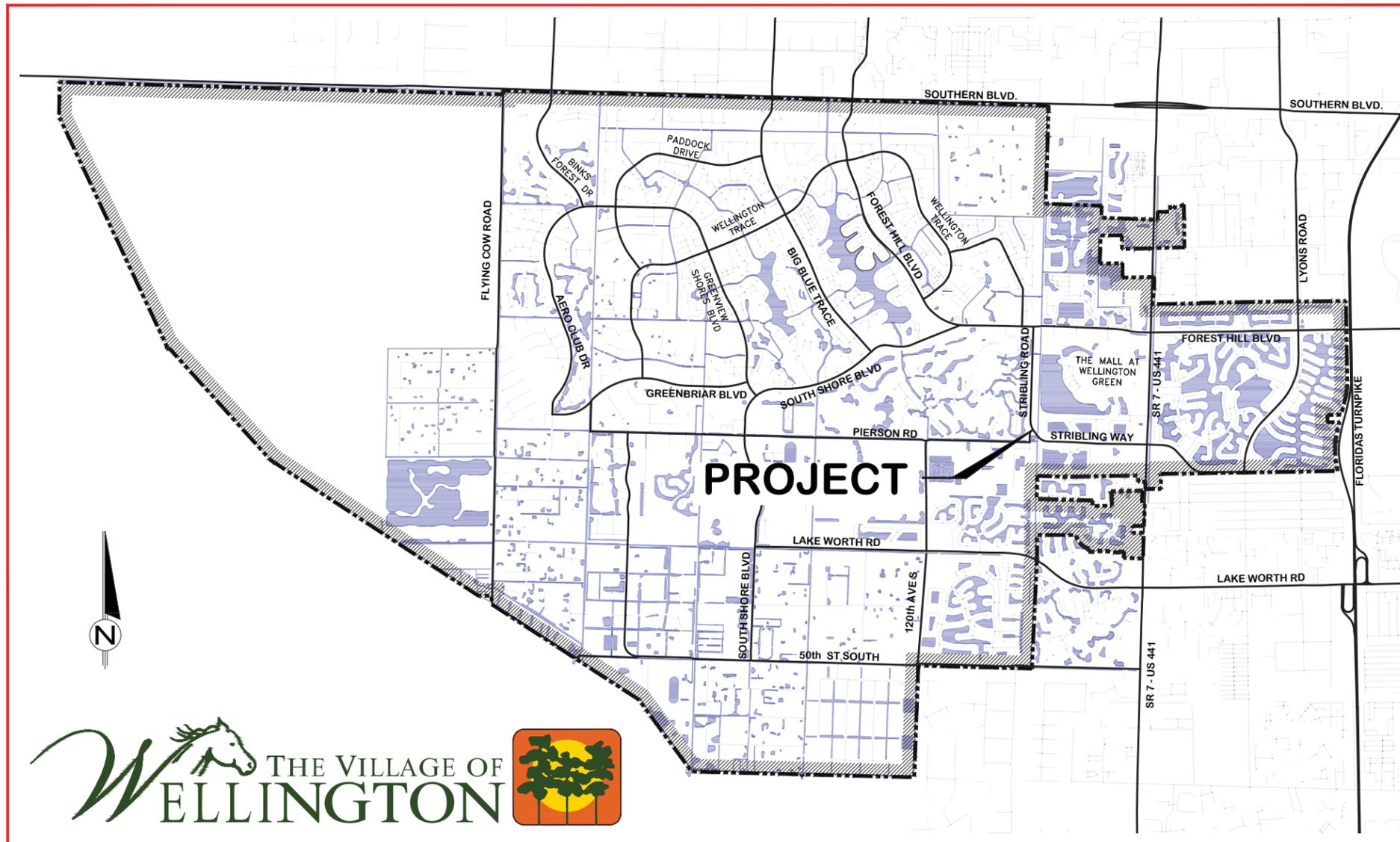
LANDSCAPE AND IRRIGATION PLANS

Distributed On: 11/3/2016

FOR STRIBLING WAY / FAIRLANE FARMS ROAD INTERSECTION IMPROVEMENT PROJECT

DRAWING INDEX

SHEET NO.	DESCRIPTION
COV	COVER
L-1	LANDSCAPE SCHEMATIC PLANS
L-2	FDOT INDEX 544 LANDSCAPE INSTALLATION DETAILS
I-1	IRRIGATION SCHEMATIC PLAN
I-2	IRRIGATION SPECIFICATIONS
I-3	IRRIGATION DETAILS



PROJECT

VILLAGE CONCIL
ANNE GERWIG - MAYOR
JOHN McGOVERN - VICE MAYOR
MICHEAL J. NAPOLEONE - COUNCILMAN
MICHEAL DRAHOS - COUNCILMAN
TANYA SISKIND - COUNCILWOMAN



VILLAGE MAP
1:3,000 SCALE



Know what's below.
Call before you dig.

REPRODUCTION:
ATTENTION IS DIRECTED TO THE FACT THAT THESE PLANS MAY HAVE BEEN REDUCED IN SIZE BY REPRODUCTION. THIS MUST BE CONSIDERED WHEN OBTAINING SCALED DATA.

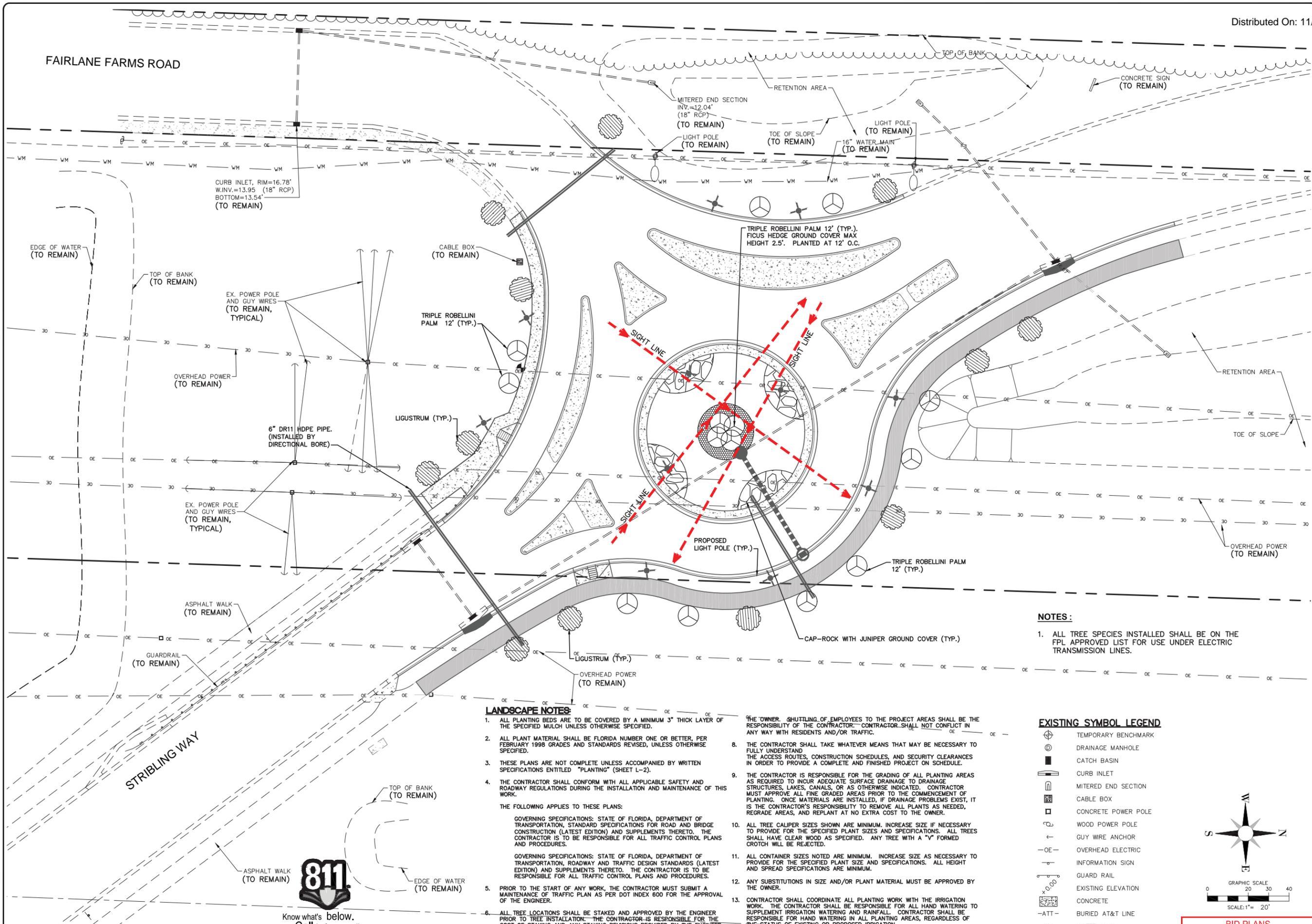
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12300 Forest Hill Boulevard, Wellington, Florida 33414

START DATE	02/2016	SHEET NO.	COVER
DRAWN	J.R.R.		
PROJECT ENGINEER	J.R.R.		
PROJECT MANAGER	J.R.R.		
CHECKED	--	JOB NO.	-

BID PLANS
08 / 07 / 2016



CURB INLET, RIM=16.78'
W.INV.=13.95' (18" RCP)
BOTTOM=13.54'
(TO REMAIN)

EX. POWER POLE AND GUY WIRES
(TO REMAIN, TYPICAL)

OVERHEAD POWER
(TO REMAIN)

6" DR11 HDPE PIPE.
(INSTALLED BY DIRECTIONAL BORE)

EX. POWER POLE AND GUY WIRES
(TO REMAIN, TYPICAL)

ASPHALT WALK
(TO REMAIN)

GUARDRAIL
(TO REMAIN)

TOP OF BANK
(TO REMAIN)

ASPHALT WALK
(TO REMAIN)



Know what's below.
Call before you dig.

ELEVATIONS SHOWN IN NGVD

LANDSCAPE NOTES:

- ALL PLANTING BEDS ARE TO BE COVERED BY A MINIMUM 3" THICK LAYER OF THE SPECIFIED MULCH UNLESS OTHERWISE SPECIFIED.
- ALL PLANT MATERIAL SHALL BE FLORIDA NUMBER ONE OR BETTER, PER FEBRUARY 1998 GRADES AND STANDARDS REVISED, UNLESS OTHERWISE SPECIFIED.
- THESE PLANS ARE NOT COMPLETE UNLESS ACCOMPANIED BY WRITTEN SPECIFICATIONS ENTITLED "PLANTING" (SHEET L-2).
- THE CONTRACTOR SHALL CONFORM WITH ALL APPLICABLE SAFETY AND ROADWAY REGULATIONS DURING THE INSTALLATION AND MAINTENANCE OF THIS WORK.
THE FOLLOWING APPLIES TO THESE PLANS:
GOVERNING SPECIFICATIONS: STATE OF FLORIDA, DEPARTMENT OF TRANSPORTATION, STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION (LATEST EDITION) AND SUPPLEMENTS THERETO. THE CONTRACTOR IS TO BE RESPONSIBLE FOR ALL TRAFFIC CONTROL PLANS AND PROCEDURES.
GOVERNING SPECIFICATIONS: STATE OF FLORIDA, DEPARTMENT OF TRANSPORTATION, ROADWAY AND TRAFFIC DESIGN STANDARDS (LATEST EDITION) AND SUPPLEMENTS THERETO. THE CONTRACTOR IS TO BE RESPONSIBLE FOR ALL TRAFFIC CONTROL PLANS AND PROCEDURES.
- PRIOR TO THE START OF ANY WORK, THE CONTRACTOR MUST SUBMIT A MAINTENANCE OF TRAFFIC PLAN AS PER DOT INDEX 600 FOR THE APPROVAL OF THE ENGINEER.
- ALL TREE LOCATIONS SHALL BE STAKED AND APPROVED BY THE ENGINEER PRIOR TO TREE INSTALLATION. THE CONTRACTOR IS RESPONSIBLE FOR THE COST OF STAKING AND ANY STAKING REVISIONS REQUIRED BY THE ENGINEER.
- CONTRACTOR AND EMPLOYEE VEHICLE PARKING SHALL BE COORDINATED WITH

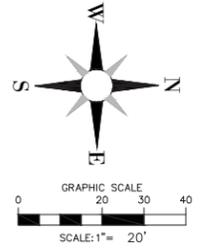
- THE OWNER, SHUTTLING OF EMPLOYEES TO THE PROJECT AREAS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. CONTRACTOR SHALL NOT CONFLICT IN ANY WAY WITH RESIDENTS AND/OR TRAFFIC.
- THE CONTRACTOR SHALL TAKE WHATEVER MEANS THAT MAY BE NECESSARY TO FULLY UNDERSTAND THE ACCESS ROUTES, CONSTRUCTION SCHEDULES, AND SECURITY CLEARANCES IN ORDER TO PROVIDE A COMPLETE AND FINISHED PROJECT ON SCHEDULE.
- THE CONTRACTOR IS RESPONSIBLE FOR THE GRADING OF ALL PLANTING AREAS AS REQUIRED TO INCUR ADEQUATE SURFACE DRAINAGE TO DRAINAGE STRUCTURES, LAKES, CANALS, OR AS OTHERWISE INDICATED. CONTRACTOR MUST APPROVE ALL FINE GRADED AREAS PRIOR TO THE COMMENCEMENT OF PLANTING. ONCE MATERIALS ARE INSTALLED, IF DRAINAGE PROBLEMS EXIST, IT IS THE CONTRACTOR'S RESPONSIBILITY TO REMOVE ALL PLANTS AS NEEDED, REGRADE AREAS, AND REPLANT AT NO EXTRA COST TO THE OWNER.
- ALL TREE CALIPER SIZES SHOWN ARE MINIMUM. INCREASE SIZE IF NECESSARY TO PROVIDE FOR THE SPECIFIED PLANT SIZE AND SPECIFICATIONS. ALL TREES SHALL HAVE CLEAR WOOD AS SPECIFIED. ANY TREE WITH A "Y" FORMED CROTCH WILL BE REJECTED.
- ALL CONTAINER SIZES NOTED ARE MINIMUM. INCREASE SIZE AS NECESSARY TO PROVIDE FOR THE SPECIFIED PLANT SIZE AND SPECIFICATIONS. ALL HEIGHT AND SPREAD SPECIFICATIONS ARE MINIMUM.
- ANY SUBSTITUTIONS IN SIZE AND/OR PLANT MATERIAL MUST BE APPROVED BY THE OWNER.
- CONTRACTOR SHALL COORDINATE ALL PLANTING WORK WITH THE IRRIGATION WORK. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL HAND WATERING TO SUPPLEMENT IRRIGATION WATERING AND RAINFALL. CONTRACTOR SHALL BE RESPONSIBLE FOR HAND WATERING IN ALL PLANTING AREAS, REGARDLESS OF THE STATUS OF EXISTING OR PROPOSED IRRIGATION.

NOTES:

- ALL TREE SPECIES INSTALLED SHALL BE ON THE FPL APPROVED LIST FOR USE UNDER ELECTRIC TRANSMISSION LINES.

EXISTING SYMBOL LEGEND

- TEMPORARY BENCHMARK
- DRAINAGE MANHOLE
- CATCH BASIN
- CURB INLET
- MITERED END SECTION
- CABLE BOX
- CONCRETE POWER POLE
- WOOD POWER POLE
- GUY WIRE ANCHOR
- OVERHEAD ELECTRIC
- INFORMATION SIGN
- GUARD RAIL
- EXISTING ELEVATION
- CONCRETE
- BURIED AT&T LINE
- WATER MAIN



BID PLANS
08 / 07 / 2016

NO.	DATE	REMARKS

THIS DOCUMENT IS THE PROPERTY OF THE VILLAGE OF WELLINGTON. IT IS TO BE USED ONLY FOR THE PROJECT AND SITE SPECIFICALLY IDENTIFIED IN THE INSTRUMENT OF SERVICE. IT IS NOT TO BE REPRODUCED IN PART OR IN WHOLE BEYOND THE INTENDED SCOPE OF USE.

LANDSCAPE SCHEMATIC FOR STRIBLING WAY / FAIRLANE FARMS ROAD INTERSECTION IMPROVEMENT PROJECT



DATE	02/20/16
DRAWN	JRR
PROJECT ENGINEER	JRR
CHECKED	JRR
DESIGNED	DF

L-1

JOB NO.

1' - 3 1/2" CALIPER TREE PLANTING

4" AND LARGER CALIPER TREE PLANTING

1' - 3 1/2" CALIPER TREE PLANTING WITH UNDERGROUND BRACING

GENERAL NOTES:

1. All dimensions 6" and less are exaggerated for illustrative purposes only.
2. Plant containers shall be removed prior to planting. If plants are not container grown, remove a minimum of the top 1/3 of burlap, fabric, or wire mesh. Never lift or handle the tree by the trunk.
3. The uppermost root on all trees shall be covered by less than 1" of soil. Use hand tools to carefully remove all excess soil. The top of root ball shall be set 1"-2" above finish grade and set plumb to the horizon. If planting pit is too deep, remove the tree and firmly pack additional soil in the bottom of the planting pit to raise the rootball. After positioning the tree in the planting pit, slice through rootballs with 3 or 4 vertical slices (top to bottom) equally distributed around the tree.
4. Backfill shall be loosened existing soil. Remove rocks, sticks, or other deleterious material greater than 1" in any direction prior to backfilling. Water and tamp to remove air pockets. If existing soils contain excessive sand, clay, or other material not conducive to proper plant growth, contact Engineer prior to planting.
5. Soil rings shall be constructed of existing soil at the outer edge of the planting pit, with a height of 3" and gently sloping sides. Do not pile soil on top of rootball.
6. Mulch shall be a 2" deep layer placed to the edge of the trunk flare, around the base of shrub, or solidly around groundcover. Never pile mulch against the tree trunk.
7. Straps shall be minimum 1" wide nylon or polypropylene. All wood stakes or anchors shall be located beyond the edge of soil ring and located below finished grade, unless otherwise specified.
8. Sabal Palms may be hurricane cut. All other palms must have fronds tied with biodegradable twine. Palm trunks shall have no burn marks, scars, or sanding.
9. All dimensions provided for wood materials are nominal.
10. When a permanent, subsurface, or drip irrigation system is provided, a soil ring is not required. Mulch to edge of planting pit.
11. Alternate tree bracing and guying systems approved by the Engineer may be used in lieu of the tree bracing and guying methods detailed on the Index. Alternate tree protection systems approved by the Engineer may be used in lieu of the tree protection barricade detailed on the index.
12. Remove aboveground guying systems at the end of the establishment period.

LAST REVISION	DESCRIPTION	FY 2016-17	INDEX NO.	SHEET NO.
07/01/07		DESIGN STANDARDS	544	1 of 3

CABBAGE PALM PLANTING FOR UP TO 24' CLEAR TRUNK

CABBAGE PALM PLANTING ON SLOPE FOR UP TO 24' CLEAR TRUNK

MULTI-TRUNK TREE PLANTING

WOOD BATTEN DETAIL

WOOD STAKING DETAIL

4" AND LARGER CALIPER TREE PLANTING ON SLOPE

1' - 3 1/2" CALIPER TREE PLANTING ON SLOPE

LAST REVISION	DESCRIPTION	FY 2016-17	INDEX NO.	SHEET NO.
07/01/07		DESIGN STANDARDS	544	2 of 3

GROUND COVER/SHRUB PLANTING

GROUND COVER/SHRUB PLANTING ON SLOPE

GROUND COVER/SHRUB LAYOUT DETAIL

TREE PROTECTION BARRICADE

NOTES:

1. For Groups of Trees, Place Barricades Between Trees And Construction Activity.
2. Dimension Varies Per Critical Protection Zone.
3. Slope Provided As Rise-Run.
4. Dimension Varies Per Critical Protection Zone.
5. Safety - Orange nylon Or Polypropylene Type Fence. Securely Affix Fence To Stringer With Staples Or Nails.
6. Tree Protection Barricades Shall Be Located To Protect A Minimum Of 75% Of The Critical Protection Zone.
7. Tree Protection Barricades Shall Be Located To Protect A Minimum Of 75% Of The Critical Protection Zone.

LAST REVISION	DESCRIPTION	FY 2016-17	INDEX NO.	SHEET NO.
07/01/07		DESIGN STANDARDS	544	3 of 3

NO.	DATE	REMARKS

FOR THE VILLAGE OF WELLINGTON
 AN INSTRUMENT OF SERVICE BY
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FDOT INDEX 544 LANDSCAPE INSTALLATION DETAILS FOR STRIBLING WAY / FAIRLANE FARMS ROAD INTERSECTION IMPROVEMENT PROJECT



START DATE	02/2016
DRAWN	JRR
PROJECT ENGINEER	JRR
PROJECT MANAGER	JRR
CHECKED	DF

PLANTING SPECIFICATIONS

PART 1 - GENERAL

1.01 SCOPE

A. The work shall consist of furnishing all labor, supplies, equipment and materials necessary to complete the planting of all trees, palms, shrubs and ground covers in the locations shown on the drawings, and all other work associated with and incidental to the landscape planting work as shown on the drawings and specified under this section.

- 1. All plant materials and references in this section are not necessarily required on this project; however, when indicated or required by drawings and/or specifications set forth in this section, they shall be applicable.
2. All plant material shall be of the specific size and quality indicated on the drawings; shall be installed, maintained and watered in strict accordance with sound nursery practices.
3. The Owner reserves the right to adjust the number and location of designated types and species to be used.
4. The Contractor shall be responsible for the complete removal and disposal of all existing plant material necessary to implement the construction plans.
5. The Contractor shall be responsible for the replacement of any existing lawn or other landscape area that is damaged during the construction process (and not otherwise shown to be renovated) to original or better condition.
6. The Contractor shall provide for the contract growing of all plant materials that cannot be guaranteed to be available from standard nursery operations at the time of the planting.
7. The Contractor shall be responsible for the protection of all existing trees and other plant material indicated to remain.
8. The Contractor is responsible for the pruning of all trees and palms as indicated on the drawings and in these specifications.
9. All materials, products and equipment shall be stored in an organized fashion as directed by the Owner or the City's representative.
10. Contractor shall field stake the location of all plant materials prior to initiating installation for the review and approval of the Owner.

B. The following documents apply to these plans:

- 1. Governing Specifications: State of Florida, Department of Transportation, Standard Specifications for Road and Bridge Construction (latest edition) and supplements thereto. The Contractor is to be responsible for all traffic control plans and procedures.
2. Governing Specifications: State of Florida, Department of Transportation, Roadway and Traffic Design Standards (latest edition) and supplements thereto. The Contractor is to be responsible for all traffic control plans and procedures.
3. FDOT, Index 600, Maintenance of Traffic.

1.02 BIDDING

A. Bidders submitting a proposal for this contract shall be responsible to inspect the site to acquaint themselves with the nature of conditions that will be encountered during construction. Bidders shall make themselves aware of all existing and/or proposed utilities in area of work.

1.03 DIMENSIONS

A. All dimensions indicated for the design are approximate. Prior to proceeding with the work, the Contractor shall carefully check and verify all dimensions and shall report any variations from those indicated on the plan to the Owner in writing.

1.04 ORDINANCES, REGULATIONS, CODES, PERMITS, & INSPECTIONS

A. The Contractor shall follow all regulations, ordinances, and codes governing the work. Permits that are required for the installation of the work shall be obtained and paid for by the Contractor. The Contractor shall arrange for and be present during all required inspections. Any additional work or furnishing of materials required due to inspection by the authorities of jurisdiction shall be furnished at no cost to the Owner.

1.05 SUPERVISION

A. The Contractor shall provide a competent superintendent and any necessary assistants on the project when work is in progress. The superintendent shall not be changed during the project without the consent of the Owner's representative unless the superintendent ceases his status as an employee of the Contractor. The superintendent shall represent the Contractor in the Contractor's absence, and all directions given to him by the Owner's representative shall be binding as if they were given to the Contractor. The Contractor's superintendent shall supervise the Contractor's employees on the job site and be responsible for their actions and conduct on the job site. The Contractor shall submit security clearances and background checks for each employee for approval by Wellington.

1.06 PROTECTION OF WORK AND PROPERTY

A. The Contractor shall continuously maintain adequate protection of all his work from damage and shall protect the Owner's property from injury or loss arising in connection with his work. The Contractor shall be responsible for contacting the necessary entities to determine the locations of all underground utilities on the site. The Contractor shall take care to avoid damage to any existing buildings, equipment, piping, pipe coverings, electrical systems, sewers, sidewalks, landscaping, grounds, aboveground or underground installations or structures of any kind. The Contractor shall be solely responsible to repair or replace any damage committed to existing elements above or below grade to its original condition and to the satisfaction of the Owner. Contractor shall adequately protect his work and all adjacent property as provided and required by law. Utilities noted on the plans are anticipated locations only. The utilities shown do not include all underground utilities on the site, and the locations indicated may not be as actually installed.

1.07 CLEANING PREMISES

A. The Contractor shall keep neat and orderly all of the area where the work is being accomplished. Disposal of rubbish and waste material resulting from the installation shall be continual. Upon completion of the work, the Contractor shall remove from the property, at his own expense, all temporary structures, rubbish, and waste materials resulting from the construction process.

1.08 SUBMITTALS:

A. SUBMITTALS: Submittals for the following products are required to be submitted for the approval of the Owner prior to beginning work on the planting portion of this project.

- 1. Fertilizer
2. Herbicides
3. Premium Gold mulch
4. Staking and guying materials.
5. Digital photographs of sample plant materials with height reference
6. Median island backfill

1.09 REQUIRED INSPECTIONS:

A. During the planting process, the Contractor shall request the following inspections. Inspections shall be made and work approved prior to beginning subsequent phases of the planting process.

- 1. An inspection shall be requested to review:
a. The quality grade of the trees and any damage to trunks or limbs caused

during the installation process. Damage to trees will downgrade the materials in accordance with "Grades and Standards - Revised".

- b. The finished grade of the tree installation.
c. The removal of binding materials on top of the tree ball in accordance with these specifications.

2. This inspection shall be requested and made before any sodding or mulching work occurs. All of the above items will be reviewed at a single inspection.

3. Installation of the pre and post emergence herbicides shall be verified prior to beginning the mulching operation.

PART 2 - PRODUCTS

2.01 NOMENCLATURE

A. All plant material shall conform to the names given in Hortus Third, published by the Macmillan Publishing Co., Inc., copyright 1976. Names of varieties not included therein shall conform with names accepted in the trade.

2.02 GRADE STANDARDS

- A. All plant material shall be nursery grown, except where specified as collected material, and shall comply with all required inspections, grading standards and plant regulations as set forth by the latest edition of the Florida Department of Agriculture's "Grades and Standards for Nursery Plants".
B. All plant material shall have a growth habit that is normal for that species and shall be sound, healthy, vigorous and free from insects, plant diseases and injuries.
C. Unless otherwise specified, all plant material shall be Florida No. 1 or better until the expiration of the required maintenance period.
D. Plant material showing signs of die-back or leaf-drop after planting will not be accepted.
E. Plant material shall not have chlorosis in any foliage.

2.03 INSPECTION AND TRANSPORTING

A. Movement of nursery stock shall comply with all Federal and State regulations.

2.04 PREMIUM GOLD MULCH

A. All mulch shall be "Premium Gold Mulch" as manufactured by Amerigrow Recycling or approved equivalent.

2.05 MEDIAN ISLAND PLANTING SOIL

A. The median islands shall be backfilled with planting soil consisting of approximately 85% coarse sharp sand and 15% Florida peat by volume. Planting soil shall be as manufactured by Atlas Peat and Soil, Inc. If a substitute is proposed, the Contractor shall provide sufficient analytical information so that the 85/15 ratio of coarse sharp sand to Florida peat can be ascertained. Any substituted planting soil shall have minimum 5% organic level (by weight) as indicated by a "Loss on Ignition" test performed and reported on by the testing laboratory. The test report on the proposed planting soil shall be submitted with the planting soil submittal. Any and all tests will be the Contractor's responsibility.

2.06 PLANT REQUIREMENTS

- A. Balled and Burlapped Plants: The root ball shall be properly protected and kept moist until planted. Whenever possible, the plant shall be handled only by the earth ball and not by the plant itself. The diameter of the ball must be sufficient to encompass all of the fibrous and feeding root system necessary for the development of the plant. Any damage to the root system may result in the rejection of plant material by Owner or the Owner's representative.
B. Container-Grown Plants: Plants which have become "pot bound" will not be acceptable. A container cutter shall be used unless the root ball system slips easily and unbroken from the container. Plants shall not be removed from the can until immediately before planting.
C. Collected Plants: Plant material that has not been taken from active nursery operations shall be dug with a root ball spread at least 1/3 greater than nursery grown plants and shall not be planted before inspection and acceptance at the site.
D. Palms: All palm species except Sabal palmetto shall have roots adequately wrapped before transporting. All sabal palms shall be booted. Sabal palms shall have a hurricane cut. Sabal palms shall be installed on site at the earliest opportunity in the construction process. Palm trees showing signs of die-back or dead fronds will not be accepted. Sabal palms will not be accepted with burn marks. Any damaged palm tree will be rejected. All sabal palms shall be from Palm Beach County or other sandy soils. All sabal palms shall be Florida Fancy. The balls of all sabal palms shall be sufficiently large to support the head of the palm.

2.07 FERTILIZER

A. All fertilizer shall be a 18-4-12 mix with the approximate following formulation:

Table with 2 columns: nutrient name and percentage. Includes total nitrogen (18.00%), ammoniacal nitrogen (2.75%), water soluble organic nitrogen (11.25%), water insoluble nitrogen (4.00%), available phosphoric acid (4.00%), water soluble potash (12.00%), chlorine - not more than (2.00%), total water soluble magnesium (1.32%), manganese (.07%), copper (.03%), zinc (.07%), iron (1.58%).

B. Fertilizer shall be delivered in unopened bags, each carrying the name of the manufacturer and the chemical makeup of the contents. All fertilizer shall be in dry condition. Fertilizer shall conform to all applicable governmental regulations.

2.08 HERBICIDES

- A. Post-emergence herbicide: The post-emergence herbicide shall be a foliar applied herbicide which will control a broad range of annual and perennial grass and broadleaved weeds plus applicable woody brush and tree species. Herbicide shall kill the entire weeds species, including the below the ground root or rhizome system. The herbicide shall have no residual soil activity. All herbicide is to be applied according to the manufacturer's recommendations.
B. Preemergence Herbicide: The preemergence herbicide shall be a selective preemergence herbicide used for the control of annual grasses and broadleaved weeds in turf and ornamentals. Herbicide shall control weeds by killing the young weed seedlings as they come into contact with the herbicide during germination. The herbicide shall be in granular form.

2.09 WATER

A. All water is to be supplied and applied by the Contractor. It shall be the Contractor's responsibility to supply water trucks as required to maintain the health of plant material and in order to keep the project on schedule.

PART 3 - EXECUTION

3.01 EXISTING VEGETATION REMOVAL

A. Contractor shall remove all existing vegetation necessary to implement the project construction plans. All weeds and grasses shall be killed with a herbicide prior to removal.

3.02 REMOVAL OF ALL INVASIVE VEGETATION

A. The Contractor shall be responsible for the removal all invasive vegetation from the project site. Invasive vegetation shall include, but not be limited to:

- 1. melaleuca
2. Australian pine
3. Florida holly
4. schefflera
5. acacia
6. downy rose myrtle
7. love vine
8. carrotwood

B. Invasive trees that are not in the path of other construction may be cut off at ground level and treated with a herbicide as per the drawings. Invasive trees that are in the path of other construction shall be removed along with the trunk and all significant portions of the root system.

C. All debris shall be removed from the site by the Contractor and disposed of in a proper manner.

3.03 GRADING OF PLANTING AREAS

A. Unless otherwise specified, all planting areas bordered by pavement, sidewalk or curb shall have a finished grade (not including mulch) 3" below the grade established by the adjacent pavement, sidewalk or curb. The Contractor shall be responsible for the removal and disposal of excess fill to an appropriate off-site location.

3.04 EXCAVATION OF PLANT HOLES

A. Tree Holes: Tree holes shall be roughly cylindrical in shape with the sides approximately vertical. Excavate planting pits that are a minimum of twice the diameter of the tree ball to be installed. Plants shall be centered in the holes.

B. Shrub Holes: Shrub holes shall be roughly cylindrical in shape with the sides approximately vertical. All holes shall be deep enough to allow for a 2" layer of backfill under the ball. Holes to accommodate shrub balls shall be 8" greater in diameter than the size of the ball of the plant supplied. Plants shall be centered in the holes.

C. Removal of Subsoil: Dispose of excess subsoil removed from planting excavations.

3.05 SETTING OF PLANTS

A. Plants shall rest on the prepared hole bottom and final grade around the plant shall conform to the surrounding grade. Plants shall be set straight and plumb. The balls of B&B or WB&B plants which cannot be planted immediately shall be covered with moist soil, mulch or other protection to prevent drying. All plants shall be watered as necessary before and after planting.

B. The Contractor will be responsible for providing hand watering to properly establish all trees and palms, and to maintain them in a healthy condition until the water provided by the irrigation system is sufficient for that purpose.

C. Cut and remove all metal, wire, rope, nylon, twine or other materials (excluding burlap) from the tops of all rootballs. Mulch should not be placed until an inspection has been called to verify that all such materials have been removed from the top of the rootballs.

3.06 BACKFILLING

A. All backfill to be used in planting trees and shrubs in the medians shall be the installed 85% sand/15% Florida peat mixture. All backfill to be used in planting trees and shrubs along the south side of Stribling Way shall be existing soils. The backfill shall be firmly tamped and settled by watering to within 1/3 of the top of the planting hole and thoroughly puddled with water to eliminate all air pockets before bringing backfill up to the finished grade. There shall be a 6" high water basin, no smaller than 12" in diameter larger than the tree ball size, constructed around each tree for watering purposes. The soil used to make the dike shall consist of planting soil. The dike should be removed prior to beginning the mulching operation.

3.07 FERTILIZING

A. Fertilize all plant materials at the following rates:

- 1. Trees: Four (4) ounces of the specified fertilizer per tree.
2. Shrubs: Three (3) gallon containers or larger: One ounce of the specified fertilizer per plant.
3. One gallon sized plants or ground covers: 10 pounds of the specified fertilizer per 1,000 square feet.
4. Do not apply fertilizer until plants have been installed and watered for a minimum of three days. Do not apply fertilizer within 4" of the trunk of any plant material.
5. Water all plant materials immediately following fertilization.
6. All fertilizer shall be applied prior to beginning the mulching operation.

3.08 STAKING AND GUYING

A. The Contractor shall be responsible for the replacement or adjustment of all trees, palms or shrubs that fall or lean during the guarantee period, regardless of the reason for the plant material's displacement. The Contractor shall be responsible for the repair of any damage caused by the falling or leaning of trees. All tree staking shall be accomplished in a neat and workmanlike manner.

B. Trees shall be securely anchored as per the tree installation detail on the drawings. Stakes shall be spaced evenly around the trunk of the trees.

C. Palms will be staked as shown on the palm installation detail on the drawings. Stakes shall be spaced evenly around the trunk of the palms.

3.09 PRUNING

A. All broken or damaged roots shall be cut off smoothly. The tops of all new or relocated trees shall be pruned in a manner complying with standard horticultural practices. All pruning will be accomplished as directed by the Owner or his designated representative. The Contractor shall be responsible for the initial pruning of all tree and shrubs as directed by the Owner or his designated representative.

B. The Contractor shall be responsible for all tree pruning that is required to perform the construction work. All tree pruning shall be performed by a certified arborist in accordance with the American National Standard for Tree Care Operations/Tree, Shrub and Other Woody Plant Maintenance - Standard Practices as prepared by the National Arborist Association, Inc.

3.10 HERBICIDE TREATMENT

A. Prior to beginning the mulching operation, the Contractor shall apply post-emergence herbicide to all weeds that have appeared within the bed lines. The Contractor shall wait the period of time recommended by the manufacturer before beginning the clearing operation. Treat all planting and mulch beds with preemergence herbicide prior to beginning the mulching operation. All herbicides are to be applied in accordance with the manufacturer's recommendations. The Contractor shall be responsible for the

removal of all weeds appearing on the site prior to the final acceptance of the work.

3.11 MULCHING

A. Within one week after plant installation, apply the specified mulch material in a minimum 3" thick layer over all tree, shrub and ground cover planting areas, unless otherwise specified. All mulch layers shall be of the specified thickness at the time of the final acceptance of the work.

3.12 DISPOSAL OF SURPLUS MATERIALS

A. Surplus excavated materials from plant holes shall be disposed of off the site. All debris and other objectionable material created through planting operations and landscape construction shall be removed completely from the site.

3.13 CONDITIONS OF PLANTING

A. Plant material shall be maintained by watering, removing dead branches, resetting plants to proper grade or upright position and any other operation necessary to assure good maintenance and compliance with the drawings and specifications. The Contractor shall keep all guy wires tight and all tree staking properly adjusted. All plants shall remain healthy, vigorous and undamaged throughout the establishment period.

3.14 ESTABLISHMENT PERIOD

A. The Contractor will be responsible for the proper maintenance, survival and condition of all plantings from the time of installation until the final acceptance of the landscape and irrigation work by the Owner. Final acceptance will not be granted prior to "substantial completion" of the project. Necessary replacement of plants during the guarantee period shall be the responsibility of the Contractor. All plantings shall be alive and in good growing condition at the time of final acceptance. The rating of each plant according to Florida Grades and Standards shall be equal to or better than that called for on the drawings and specified in this section at the time of final acceptance.

3.15 COMPLETION AND ACCEPTANCE

A. Completion of the work shall mean full compliance and conformity with the provisions expressed or implied in the drawings and in the specifications, and acceptance of the work by the Owner. Upon satisfactory completion of the work, the Owner will perform an inspection of the work to determine if the planting work is ready for acceptance.

3.16 GUARANTEE AND REPLACEMENT

A. All plant material shall be guaranteed for a minimum of one (1) year after "Substantial Completion" of project or final acceptance of the landscape and irrigation work by the Owner, whichever is later. The guaranteeing of plant material shall be construed to mean complete replacement with plant material of the same species, size, quality and grade as that of the original material. Plant material not in healthy growing condition, or with questionable survival ability at the end of the guarantee period shall be replaced by the Contractor at the expense of the Contractor. During the guarantee period it shall be the Contractor's responsibility to immediately replace any dead material.

3.17 MAINTENANCE PROVISIONS

A. The Contractor shall be responsible for complete maintenance of all landscaping until "Substantial Completion" of the project or final acceptance of the landscape and irrigation work by the Owner, whichever is later. Maintenance shall include, but not be limited to:

- 1. Watering of all plant materials as required to provide optimum conditions for plant health and growth.
2. Immediate control of all harmful plant insects (including ants) and diseases.
3. Removal of all weeds from the planting beds within one week after their appearance.
4. Trimming of all shrubs and trees as directed by the Owner or his designated representative.
5. Fertilizing of all plant materials as required to provide good conditions for plant health and growth.

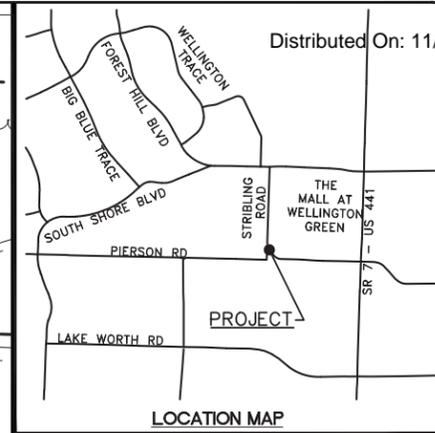
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Distributed On: 11/3/2016

ELEVATIONS SHOWN IN NGVD

BID PLANS
08 / 07 / 2016

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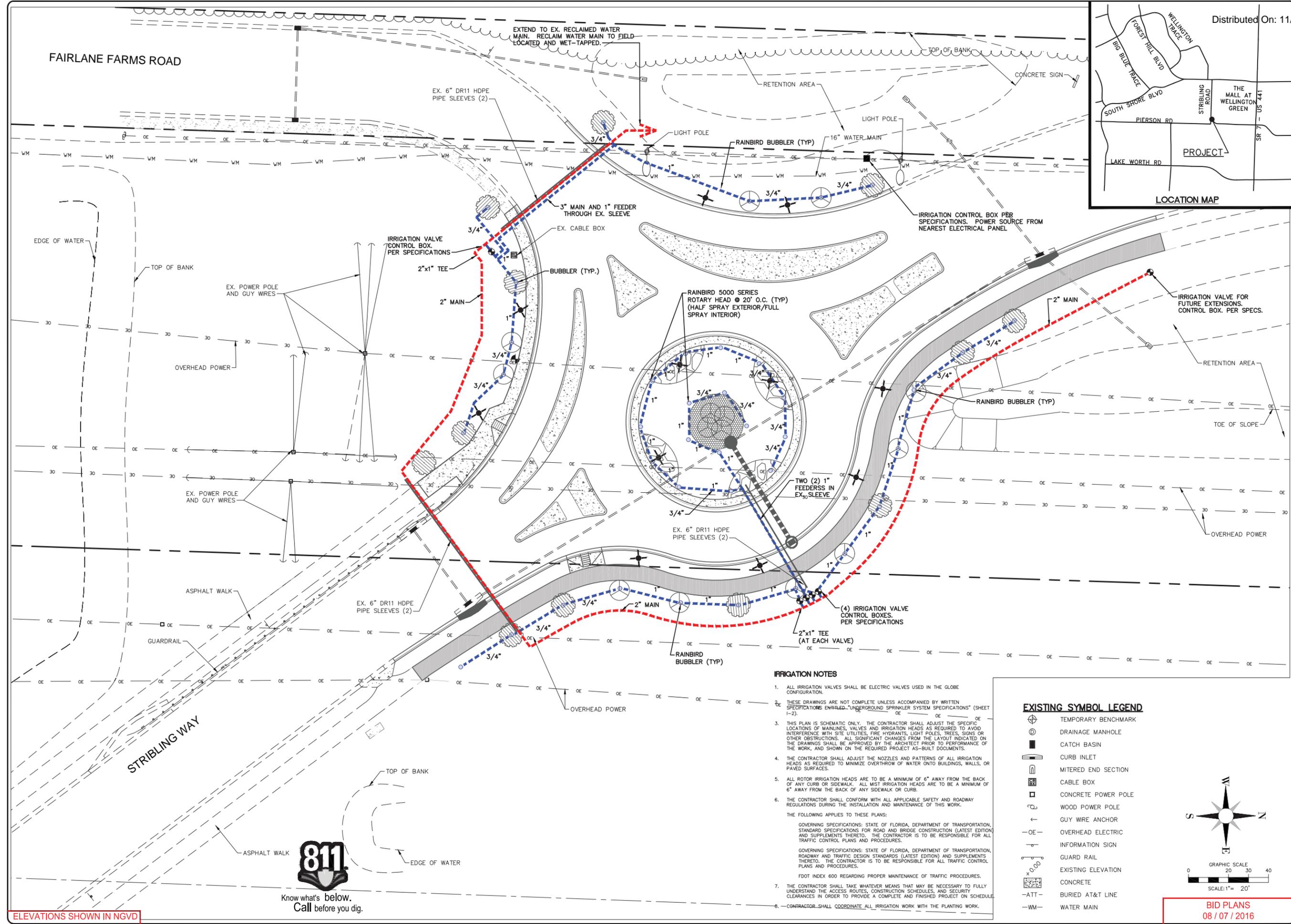
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IRRIGATION SCHEMATIC PLAN FOR STRIBLING WAY / FAIRLANE FARMS ROAD INTERSECTION IMPROVEMENT PROJECT



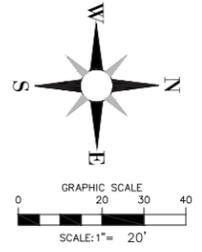
START DATE	02/20/16
DRAWN	JRR
PROJECT ENGINEER	JRR
PROJECT MANAGER	JRR
CHECKED	PW
JOB NO.	I-1



- IRRIGATION NOTES**
- ALL IRRIGATION VALVES SHALL BE ELECTRIC VALVES USED IN THE GLOBE CONFIGURATION.
 - THESE DRAWINGS ARE NOT COMPLETE UNLESS ACCOMPANIED BY WRITTEN SPECIFICATIONS ENTITLED "UNDERGROUND SPRINKLER SYSTEM SPECIFICATIONS" (SHEET 1-2).
 - THIS PLAN IS SCHEMATIC ONLY. THE CONTRACTOR SHALL ADJUST THE SPECIFIC LOCATIONS OF MAINLINES, VALVES AND IRRIGATION HEADS AS REQUIRED TO AVOID INTERFERENCE WITH SITE UTILITIES, FIRE HYDRANTS, LIGHT POLES, TREES, SIGNS OR OTHER OBSTRUCTIONS. ALL SIGNIFICANT CHANGES FROM THE LAYOUT INDICATED ON THE DRAWINGS SHALL BE APPROVED BY THE ARCHITECT PRIOR TO PERFORMANCE OF THE WORK, AND SHOWN ON THE REQUIRED PROJECT AS-BUILT DOCUMENTS.
 - THE CONTRACTOR SHALL ADJUST THE NOZZLES AND PATTERNS OF ALL IRRIGATION HEADS AS REQUIRED TO MINIMIZE OVERTHROW OF WATER ONTO BUILDINGS, WALLS, OR PAVED SURFACES.
 - ALL ROTOR IRRIGATION HEADS ARE TO BE A MINIMUM OF 6" AWAY FROM THE BACK OF ANY CURB OR SIDEWALK. ALL MIST IRRIGATION HEADS ARE TO BE A MINIMUM OF 6" AWAY FROM THE BACK OF ANY SIDEWALK OR CURB.
 - THE CONTRACTOR SHALL CONFORM WITH ALL APPLICABLE SAFETY AND ROADWAY REGULATIONS DURING THE INSTALLATION AND MAINTENANCE OF THIS WORK.
- THE FOLLOWING APPLIES TO THESE PLANS:
- GOVERNING SPECIFICATIONS: STATE OF FLORIDA, DEPARTMENT OF TRANSPORTATION, STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION (LATEST EDITION) AND SUPPLEMENTS THERETO. THE CONTRACTOR IS TO BE RESPONSIBLE FOR ALL TRAFFIC CONTROL PLANS AND PROCEDURES.
- GOVERNING SPECIFICATIONS: STATE OF FLORIDA, DEPARTMENT OF TRANSPORTATION, ROADWAY AND TRAFFIC DESIGN STANDARDS (LATEST EDITION) AND SUPPLEMENTS THERETO. THE CONTRACTOR IS TO BE RESPONSIBLE FOR ALL TRAFFIC CONTROL PLANS AND PROCEDURES.
- FDOT INDEX 600 REGARDING PROPER MAINTENANCE OF TRAFFIC PROCEDURES.
- THE CONTRACTOR SHALL TAKE WHATEVER MEANS THAT MAY BE NECESSARY TO FULLY UNDERSTAND THE ACCESS ROUTES, CONSTRUCTION SCHEDULES, AND SECURITY CLEARANCES IN ORDER TO PROVIDE A COMPLETE AND FINISHED PROJECT ON SCHEDULE.
 - CONTRACTOR SHALL COORDINATE ALL IRRIGATION WORK WITH THE PLANTING WORK.

EXISTING SYMBOL LEGEND

- TEMPORARY BENCHMARK
- DRAINAGE MANHOLE
- CATCH BASIN
- CURB INLET
- MITERED END SECTION
- CABLE BOX
- CONCRETE POWER POLE
- WOOD POWER POLE
- GUY WIRE ANCHOR
- OVERHEAD ELECTRIC
- INFORMATION SIGN
- GUARD RAIL
- EXISTING ELEVATION
- CONCRETE
- BURIED AT&T LINE
- WATER MAIN



ELEVATIONS SHOWN IN NGVD



BID PLANS
08 / 07 / 2016

UNDERGROUND SPRINKLER SYSTEM SPECIFICATIONS

PART 1 - GENERAL

- 1.1 SUMMARY
A. The intent of these specifications is to provide for a new and complete irrigation system. The work shall include the provision of the irrigation pump, connection of the pump system to the irrigation well, and all irrigation equipment, materials and labor required for the installation and proper operation of the system.
B. All portions of the irrigation system worked on under this Contract shall operate in an effective and satisfactory manner so that they shall effectively irrigate all landscape areas with 100% coverage.
C. The Contractor shall provide for the installation and proper operation of the system.
D. The following documents apply to these plans:
1. Governing Specifications: State of Florida, Department of Transportation, Standard Specifications for Road and Bridge Construction (latest edition) and supplements thereto.
2. Governing Specifications: State of Florida, Department of Transportation, Roadway Traffic Design Standards (latest edition) and supplements thereto.
3. FDOT Maintenance of Traffic Index 600
1.2 BIDDING: Bidders submitting a proposal for this contract shall be responsible to inspect the site to acquaint themselves with the nature of conditions which will be encountered during construction.
1.3 DIMENSIONS: All dimensions indicated for the irrigation design are approximate.
1.4 ORDINANCES, REGULATIONS, CODES, PERMITS, & INSPECTIONS: The Contractor shall follow all regulations, ordinances, and codes governing the work.
1.5 GUARANTEE: The Contractor shall guarantee the system for one (1) year from date of final acceptance by the Owner.
1.6 AS-BUILT RECORD DRAWINGS: The Contractor shall provide and keep up to date a complete set of as-built drawings which shall be corrected daily to show significant changes in the locations of well, pump station, mainlines, grounding rods, valves, controller, piping, and other substantial deviations from the original irrigation design drawing.
1.7 TRAINING OF MAINTENANCE PERSONNEL: Upon completion of the work and final acceptance by the Owner, the Contractor shall be responsible for the training of maintenance personnel in the operation and maintenance of the system.
1.8 SUPERVISION: The Contractor shall provide a competent superintendent and any necessary assistants on the project when work is in progress.
1.9 PROTECTION OF WORK AND PROPERTY: The Contractor shall be responsible for contacting the necessary entities to determine the locations of all underground utilities on the site.
1.10 CLEANING PREMISES: The Contractor shall keep neat and orderly all of the area where this system is being installed.
1.11 SUBMITTALS
A. Product Data: The Contractor shall submit for approval five sets of technical data and installation instructions for all underground sprinkler system components.
B. The Contractor shall provide engineered design calculations for all joint restraints in the reuse water piping.
C. The Contractor shall provide the following additional submittals for approval:
1. Project Schedule
2. Schedule of Values
3. List of Subcontractors
4. Maintenance of Traffic Plan
5. Work Plan Narrative
6. Shop Drawings for all system components

PART 2 - PRODUCTS

- 2.1 MATERIALS: All materials used in the system shall be new and without flaws or defects of any type. All materials shall have a minimum guarantee of one year against material defects or defective workmanship.
2.2 PVC PIPE AND FITTINGS
A. All irrigation and reuse water pipe utilized on this project shall be purple colored PVC pipe specifically manufactured for use with reuse irrigation quality water.
B. Plastic pipe for the main irrigation water lines shall be Schedule 40 unplasticized polyvinyl chloride pipe, solvent weld type as manufactured by CertainTeed Corporation, Colonial Plastics Mfg. Co., or American Pipe and Plastics, Inc.
C. When specified on the drawings, sleeves under roadways shall be HDPE pipe conforming to PBCWUD standards.
D. All taps on mains or laterals shall be made with tees.
E. Prior to the connection of any joint more than 1" in diameter with PVC glue, the fittings and pipes shall be treated with a high etch PVC cleaner.
F. All sleeves shall be a minimum of two sizes larger than the size of pipe to be accommodated.
G. Pipe for the reuse water mainline shall be 8" diameter PVC C900 Class 150 DR 14 high pressure water pipe.
H. All joints for the reuse water mainline shall be ductile iron self restrained fittings designed for use with PVC pipe.
2.3 SWING JOINTS AND RISERS
A. All 1/2" swing joints shall consist of flexible, thickwalled, polyethylene pipe.
B. All PVC piping for swing joints larger than 1/2" shall consist of 3/4" or larger Schedule 80 nipples and street elbows threaded together, utilizing Teflon (TFE) tape or liquid Teflon.
2.4 ELECTRIC WIRING: All electrical work shall be accomplished according to all applicable building and electrical codes.
2.5 CONTROL CABLE: The electric control cable shall be Toro Jacketed Decoder cable 14 AWG, solid copper, 2-conductor wire for direct burial as manufactured by Paige Electric Co., Model Number 170800YL.
2.6 WIRE CONNECTORS: All low voltage wire splices are to be made using 3M DBY-6 or 3M DBR-6 connectors.
2.7 DECODER TO SOLENOID CABLE: The decoder to solenoid cable shall be as manufactured by Paige Electric Co., and as specifically recommended for Toro 2 wire installations.
2.8 SURGE PROTECTORS: All surge protectors shall be Toro DEC-SG-LINE line surge protectors.
2.9 SPRINKLER HEADS:
A. Irrigation heads and nozzles shall be as specified on the drawings.
B. All sprinkler nozzles shall perform to the manufacturer's specifications concerning diameter of throw and flowrate at given pressures.
2.10 ISOLATION VALVES, BALL VALVES, AND VALVE BOXES
A. Isolation Valves: Remote control valve shut off valves, and isolation valves shall be 1 or 2 piece bronze body, full port, stainless steel ball, Teflon seat ball valves.
B. Valve Boxes for Gate Valves: Each mainline gate valve shall be located inside a rigid injection molded polyethylene valve box.
2.11 LIGHTNING PROTECTION: Lightning protection shall be installed in accordance with the controller manufacturer's recommendation to protect each automatic controller, and in accordance with the installation detail on the drawings.
2.12 CONTROL EQUIPMENT
A. The automatic controller shall be as manufactured by Toro Sentinel Model Number ESB-TW-204-U2-TDC-WSS-ATX.
B. Automatic control valves shall be Irritrol Series 100-S scrubber valves with DC latching solenoids and recycled water solenoid kit.
C. The Contractor shall provide and install a Lantronix Wireless Device Server.
D. The Contractor shall provide and install a Lantronix Wireless Device Server.

- locking mechanisms shall be two acetal spring locks which require an unlocking device to open, but not to close.
2.13 PRESSURE RELIEF VALVES: The pressure relief valves shall be a 1 1/2" Jayco 312 pressure relief valve with 2 through 300 pound spring rating.
2.14 AIR RELIEF VALVES: The air relief valves shall be as manufactured by Bernad, Model Number 4415.
2.15 RAIN SENSOR: The rain sensor shall be "Mini-Oik II", Model 502 as manufactured by Glen Hilton products, Inc., Aquamiser as manufactured by Glen Hilton, or Toro Rainswitch.
2.16 REDUCED PRESSURE BACKFLOW PREVENTER:
A. The reduced pressure backflow preventer shall be a 2 1/2" Febco 826YD.
B. Use dielectric fittings at connections where pipes, fittings, or appurtenances of dissimilar metals are joined.
2.17 DETECTABLE MARKING TAPE: Detectable marking tape shall be purple 3" wide detectable utility marking tape as manufactured by Pesco or equivalent.
PART 3 - EXECUTION
3.1 INSTALLATION: All materials and equipment shall be installed in a neat and workmanlike manner following the recommendations of the manufacturers of the materials.
3.2 SLEEVE INSTALLATION: All PVC piping that cross roadways or pavement shall be sleeved.
3.3 EXCAVATION
A. The Contractor shall perform all excavation necessary to install the system indicated on drawings.
B. Trench bottoms shall be smooth, clean and free of all stones, stumps and rocks.
C. The minimum depth of cover of all piping and sleeves shall be as follows:
Vehicle Traffic Areas
Pipe Size Depth of Cover in Inches
3/4" through 2 1/2" 18"
3" and 4" 24"
6" and larger 30"
Non-Traffic Areas
Pipe Size Depth of Cover in Inches
3/4" through 2" 12"
2 1/2" and 3" 18"
4" and larger 24"
The minimum depth of cover over piping 2" and smaller shall be 12 inches.
D. Excavate trenches to a sufficient width to provide a minimum of 6" of separation between parallel pipe lines.
E. It is the responsibility of the Contractor to determine exact location of existing underground utilities and to avoid damage to such during construction.
F. All bell and spigot piping and mechanical joints shall be installed in accordance with the manufacturer's specifications.
3.4 INSTALLATION OF PIPE AND EQUIPMENT
A. PVC pipe shall be protected from direct sunlight while in storage.
B. Prior to backfill, PVC pipe in trench shall be protected from direct sunlight by covering with a layer of clean sandy material.
C. Substantial deviations from the piping lay-out shall be approved by the Owner and shall be recorded as work progresses and as-built drawings of complete irrigation system shall be furnished to the Owner as previously specified in this section.
D. Installation of system piping shall be in accordance with manufacturer's instructions.
All piping and equipment joints shall be water tight. Main shall be flushed and pressure tested as noted in paragraph 3.16 (A) of these specifications.
3.5 BACKFILLING
A. Over-excavation of trenches under pipe shall be backfilled with clean sandy fill material, free of organic materials and objects larger than 1/4" diameter.
B. Trenches from pipe flow line to 2" above top of pipe shall be backfilled with clean sandy fill material free of organic materials and objects larger than 1/2" diameter, or other soil fill material as recommended by the pipe manufacturer in order to provide suitable pipe stabilization.
C. Trenches from 2" above top of pipe and up to finish grade shall be backfilled with clean sandy fill material removed by excavation, or other soil fill material as recommended by the pipe manufacturer in order to provide suitable pipe stabilization.
D. Reuse water mainlines shall be installed with purple 3" wide detectable underground utility marking tape as manufactured by T. Christy's Enterprises, Inc. or approved equal.
3.6 SPRINKLER HEADS
A. All sprinkler heads shall be installed on swing joints as shown on drawings.
B. All rotor type sprinkler heads shall be located a minimum of 6" away from the edge of any curb, roadway or sidewalk.
C. All mist type sprinkler heads shall be located a minimum of 6" away from the edge of any curb or sidewalk.
3.7 ELECTRIC CONTROL CABLE
A. All electric control cable shall be sized as specified.
B. At all wire connections at remote control valves, and at all wire splices, the wire shall be left with sufficient slack so that in case of repair the valve bonnet and other splices may be brought to the surface without disconnecting the wires.
3.8 CONTROLLER
A. The controller shall be installed following the recommendations of the manufacturer of the equipment.
B. Inside the controller, the Contractor shall mount a waterproof listing of each station of the landscape area being irrigated by that station.
C. Ground the controller in accordance with the detail indicated on the plans.
3.9 ELECTRICAL WORK: All electrical work shall be installed as per all applicable codes and regulations.
3.10 RAIN SENSOR
A. The Contractor shall install the rain sensor as per the manufacturer's recommendations.
B. The rain sensor shall be mounted as per the manufacturer's recommendations.
C. The Contractor shall make adjustments to the rain sensing equipment as required to properly adjust for the newly installed plant materials and other site conditions.
3.11 REMOTE CONTROL VALVES: Remote control valves shall be installed as indicated on the drawings and according to manufacturer's recommendations.
3.12 VALVE BOXES AND MARKERS: All valve boxes, or any other miscellaneous marker or access box shall be installed so the top of said structure is at finished grade.
3.13 PRESSURE RELIEF AND AIR RELIEF VALVES: Final location of the relief valves shall be coordinated with the Landscape Architect and the Owner.
3.14 REDUCED PRESSURE BACKFLOW PREVENTER
A. The reduced pressure back preventer shall be installed in accordance with the manufacturer's recommendations, and all applicable codes and regulations.
B. All piping between the backflow preventer and the pump station, and piping 5' into the ground on the discharge of the backflow preventer, shall be Schedule 40 galvanized pipe with vitualic or ANSI flanged fittings.
3.15 INSTALLATION OF THE PUMP STATION
A. The Contractor shall install the necessary pump station equipment in accordance with the drawings and specifications.

ELEVATIONS SHOWN IN NGVD

- B. The Contractor shall be responsible for all labor and materials necessary for the connection of the pump station to the irrigation water well.
C. The Contractor shall be responsible for all labor and materials necessary to connect the pump system, and all associated equipment, to the electric power source provided by the Owner.
D. Pump Station Testing: The complete pumping station shall operate without appreciable vibration throughout the range of operating conditions.
3.16 TESTING, BALANCING AND ADJUSTMENTS:
A. Upon completion of the irrigation main installation, and after sufficient time has been allowed for solvent weld joints to cure, the mainline shall be tested for proper operation.
B. Upon completion of the reuse water main installation, the mainline shall be pressure tested.
C. Both mainline pressure tests are required to be witnessed by the Owner, and the Contractor is to be required to keep written records of the test.
D. Upon completion of the irrigation system, and after sufficient time has been allowed for solvent weld joints to cure, the each system shall be tested for proper operation.
E. Balancing and Adjustment: The Contractor shall balance and adjust the various components of the sprinkler system so the overall operation of the system is effective.
END OF SECTION

Distributed On: 11/3/2016

Table with columns: NO., DATE, REMARKS, BY

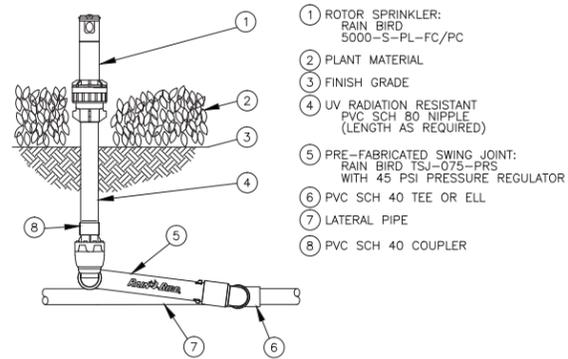
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IRRIGATION SPECIFICATIONS FOR STRIBLING WAY / FAIRLAINE FARMS ROAD INTERSECTION IMPROVEMENT PROJECT



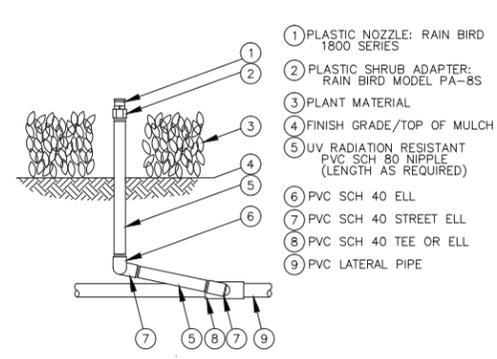
Table with columns: START DATE, DRAWN, PROJECT ENGINEER, PROJECT MANAGER, CHECKED, PW, JOB NO.

BID PLANS 08 / 07 / 2016



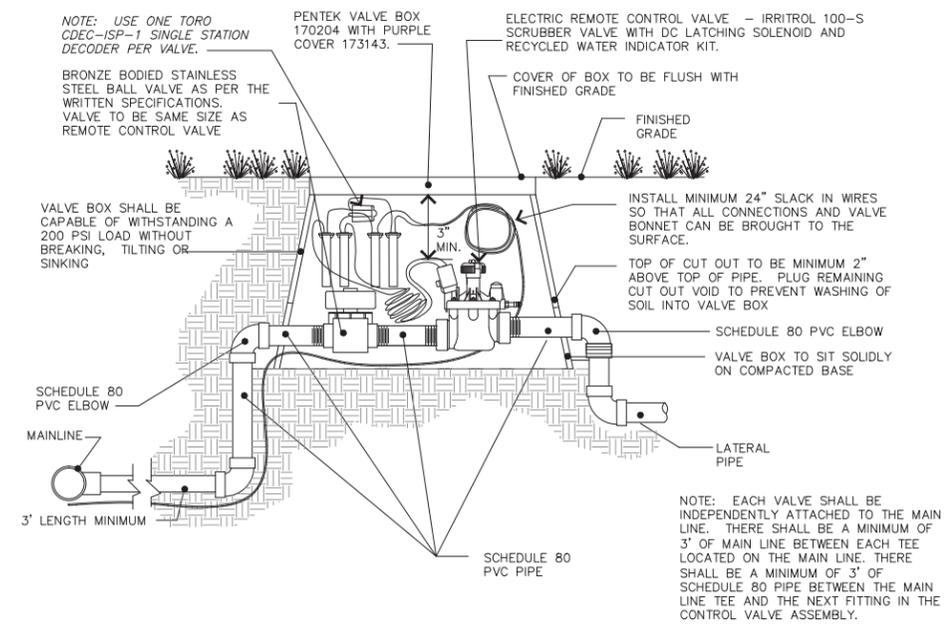
- ① ROTOR SPRINKLER: RAIN BIRD 5000-S-PL-FC/PC
- ② PLANT MATERIAL
- ③ FINISH GRADE
- ④ UV RADIATION RESISTANT PVC SCH 80 NIPPLE (LENGTH AS REQUIRED)
- ⑤ PRE-FABRICATED SWING JOINT: RAIN BIRD TSJ-075-PRS WITH 45 PSI PRESSURE REGULATOR
- ⑥ PVC SCH 40 TEE OR ELL
- ⑦ LATERAL PIPE
- ⑧ PVC SCH 40 COUPLER

1 ROTOR POP-UP SPRINKLER
N.T.S. 5000 PLUS SHRUB



- ① PLASTIC NOZZLE: RAIN BIRD 1800 SERIES
- ② PLASTIC SHRUB ADAPTER: RAIN BIRD MODEL PA-8S
- ③ PLANT MATERIAL
- ④ FINISH GRADE/TOP OF MULCH
- ⑤ UV RADIATION RESISTANT PVC SCH 80 NIPPLE (LENGTH AS REQUIRED)
- ⑥ PVC SCH 40 ELL
- ⑦ PVC SCH 40 STREET ELL
- ⑧ PVC SCH 40 TEE OR ELL
- ⑨ PVC LATERAL PIPE

2 1800 NOZZLE ON RISER
N.T.S. WITH SWING JOINT



NOTE: USE ONE TORO CDEC-ISP-1 SINGLE STATION DECODER PER VALVE.

PENTEK VALVE BOX 170204 WITH PURPLE COVER 173143.

ELECTRIC REMOTE CONTROL VALVE - IRRITROL 100-S SCRUBBER VALVE WITH DC LATCHING SOLENOID AND RECYCLED WATER INDICATOR KIT.

BRONZE BODIED STAINLESS STEEL BALL VALVE AS PER THE WRITTEN SPECIFICATIONS. VALVE TO BE SAME SIZE AS REMOTE CONTROL VALVE.

COVER OF BOX TO BE FLUSH WITH FINISHED GRADE

FINISHED GRADE

INSTALL MINIMUM 24" SLACK IN WIRES SO THAT ALL CONNECTIONS AND VALVE BONNET CAN BE BROUGHT TO THE SURFACE.

TOP OF CUT OUT TO BE MINIMUM 2" ABOVE TOP OF PIPE. PLUG REMAINING CUT OUT VOID TO PREVENT WASHING OF SOIL INTO VALVE BOX

SCHEDULE 80 PVC ELBOW

VALVE BOX TO SIT SOLIDLY ON COMPACTED BASE

SCHEDULE 80 PVC ELBOW

MAINLINE

3' LENGTH MINIMUM

SCHEDULE 80 PVC PIPE

LATERAL PIPE

NOTE: EACH VALVE SHALL BE INDEPENDENTLY ATTACHED TO THE MAIN LINE. THERE SHALL BE A MINIMUM OF 3' OF MAIN LINE BETWEEN EACH TEE LOCATED ON THE MAIN LINE. THERE SHALL BE A MINIMUM OF 3' OF SCHEDULE 80 PIPE BETWEEN THE MAIN LINE TEE AND THE NEXT FITTING IN THE CONTROL VALVE ASSEMBLY.

3 CONTROL VALVE INSTALLATION DETAIL
NOT TO SCALE

NO.	DATE	REMARKS

FOR THE VILLAGE OF WELLINGTON, FLORIDA, THE VILLAGE OF WELLINGTON REPRODUCED IN PART OR IN WHOLE BEYOND THE INTENDED SCOPE OF USE.

IRRIGATION DETAILS FOR STRIBLING WAY / FAIRLANE FARMS ROAD INTERSECTION IMPROVEMENT PROJECT



DATE	02/2016
DRAWN	JRR
PROJECT ENGINEER	JRR
PROJECT MANAGER	JRR
CHECKED	PW

I-3

JOB NO. -

W:\DEPARTMENTS\ENGINEERING\CAD\PROJECTS\FAIRLANE FARMS AND STRIBLING ROAD-A-BOUT\LANDSCAPE AND IRRIGATION PLANS\VAE\IRRIGATION.DWG