

# FOREST LAKES MSTU

## PROJECT F-58 SIDEWALK LAYOUT/DIMENSION, PLANTING, IRRIGATION, AND LANDSCAPE LIGHTING PLANS

### Forest Lakes Blvd.(STA 109+75 to 135+81.90) and Woodshire Ln.(STA 0+00 to 12+00)

## PHASE TWO

### 100% BID SUBMITTAL PLANS (04-02-2013)

PURCHASE ORDER #4500113538

**GENERAL PROJECT DECLARATIONS:**

- A. Total Landscape Area = 1.76 Acres
- B. Total Excavated Area = 1.76 Acres
- C. County will restrict construction during peak traffic hours.
- D. No clearing of any native vegetation will take place.
- E. This project is in general compliance with Collier County Streetscape master plan and Collier County right-of-way ordinance and FDOT standards index #546-2010 interim standards/sight distance at intersections to apply.
- F. Collier County maintenance of traffic policy and FDOT "Roadway and Traffic Design Standards" index 600 series is located in the attached written contract documents.

**UTILITY CONTRACT REFERENCES:**

Florida Power and Light Company  
4105 15th Avenue SW  
Naples, Florida 34116  
Mr. E. Hartley, Senior Designer

Collier County Public Utilities Division/ North Wastewater Plant Admin  
6027 Shirley Street  
Naples, Florida 34109  
George Yilmaz, Wastewater Department Director  
(239)597-5355

3301 East Tamiami Trail  
Naples, Florida 34112  
Mr. Paul Mattausch, Water Department Director  
(239) 252-6112  
Locates: 591-0882

Collier County Traffic Operations and Alternative Transportation Modes  
2885 South Horseshoe Drive  
Naples, Florida 34104  
Mr. Robert W. Tipton, P.E.  
(239) 252-8260

Investigate before you excavate, "Call Sunshine State One" Toll Free 1-800-432-4770,  
www.callsunshine.com  
Florida Statute 553.851 (1979) requires minimum of 2 days and maximum of 5 days notice before  
you excavate.

PREPARED FOR  
COLLIER COUNTY BOARD OF COUNTY COMMISSIONERS  
3301 EAST TAMAMI TRAIL  
NAPLES, FLORIDA 34112  
(239) 253-8097

COORDINATING AGENCY: ALTERNATIVE TRANSPORTATION MODES,  
PAMELA J. LULICH, ASLA, LANDSCAPE OPERATIONS MANAGER  
DARRYL RICHARD, ASLA MSTU PROJECT MANAGER  
2885 SOUTH HORSESHOE DRIVE  
NAPLES, FLORIDA 34104  
(239) 253-6291

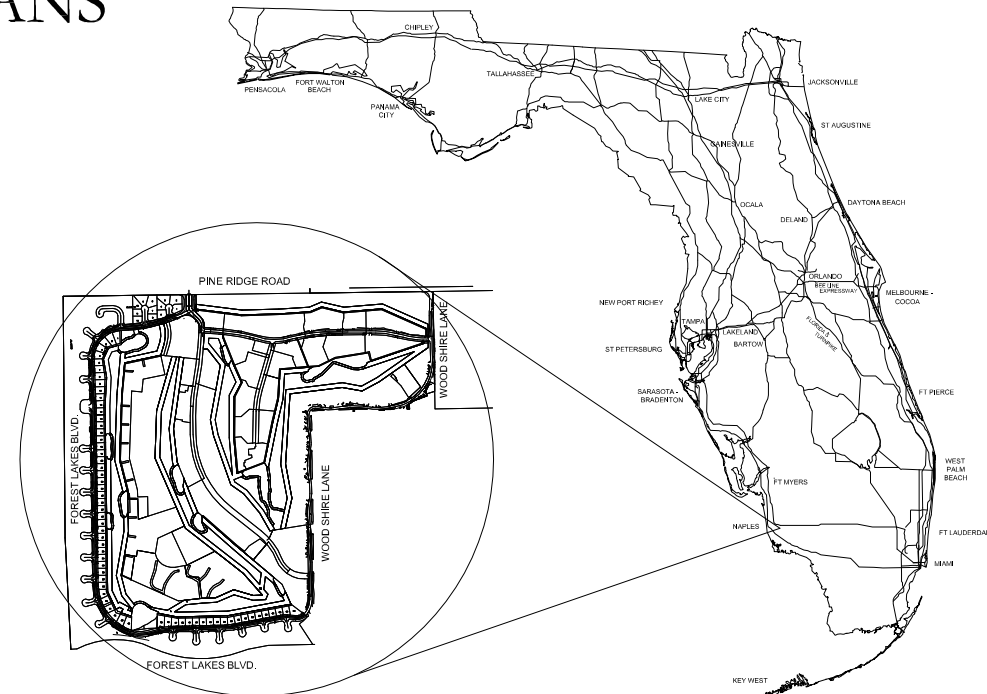


**PREPARED BY:**

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**AGNOLI**  
**BARBER &**  
**BRUNDAGE, INC.**  
AGNOLI BARBER & BRUNDAGE, INC.  
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E-Mail: carr@abbinc.com



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**FOREST LAKES MSTU  
BOND PROJECT F-58  
COLLIER COUNTY, FLORIDA  
PREPARED FOR: COLLIER COUNTY D.O.T.**

JOB #: 034-09

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SCALE: N.T.S.



**PHASE 2 PLANTING, IRRIGATION,  
AND LANDSCAPE LIGHTING PLANS**

Date: 11-06-11  
Revision Date: 11-21-11, 12-21-11, 03-12-12, 06-04-12  
Revision Date: 07-18-12 (Phase 2, 100% Bid Submittal)  
Revision Date: 04-02-2013 (P. 2, Revised Bid Submittal)

**SHEET NUMBER:  
TITLE**

10 11  
15 14

PINE RIDGE ROAD

FOREST LAKES BLVD.

BLOCK "A"

BLOCK "A" 10  
11  
12

S-2 Top  
S-2 Bottom  
S-3 Top  
S-3 Middle  
S-3 Bottom  
S-4

FOREST LAKES BLVD.

WOODSHIRE LANE

WOODSHIRE LANE

FOREST LAKES BLVD.

**GENERAL NOTES:  
(SHEETS S-2 to S-3)**

1. WARNING: Contractor to call in locates and use extreme caution due to presence of buried electrical trunk line in easement area.
2. Existing Globe Lights to be safely removed, capped and returned to Turtle Lake Condominium Property Manager.
3. Adjust/repair irrigation as needed to accomodate new sidewalk - see IR-3 for schematic head layout - match existing components/specs on each condo property.
4. Existing boulders in sidewalk alignments to be stock piled for future use in designated areas on landscape plans. Any boulders less than 24" diameter are to be removed and disposed of.
5. All existing planting in sidewalk alignment is to be removed and adjacent impacted plantings refurbished by filling in like plant species, re-setting decorative landscape blocks and or boulders, etc.

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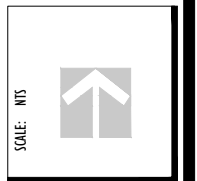


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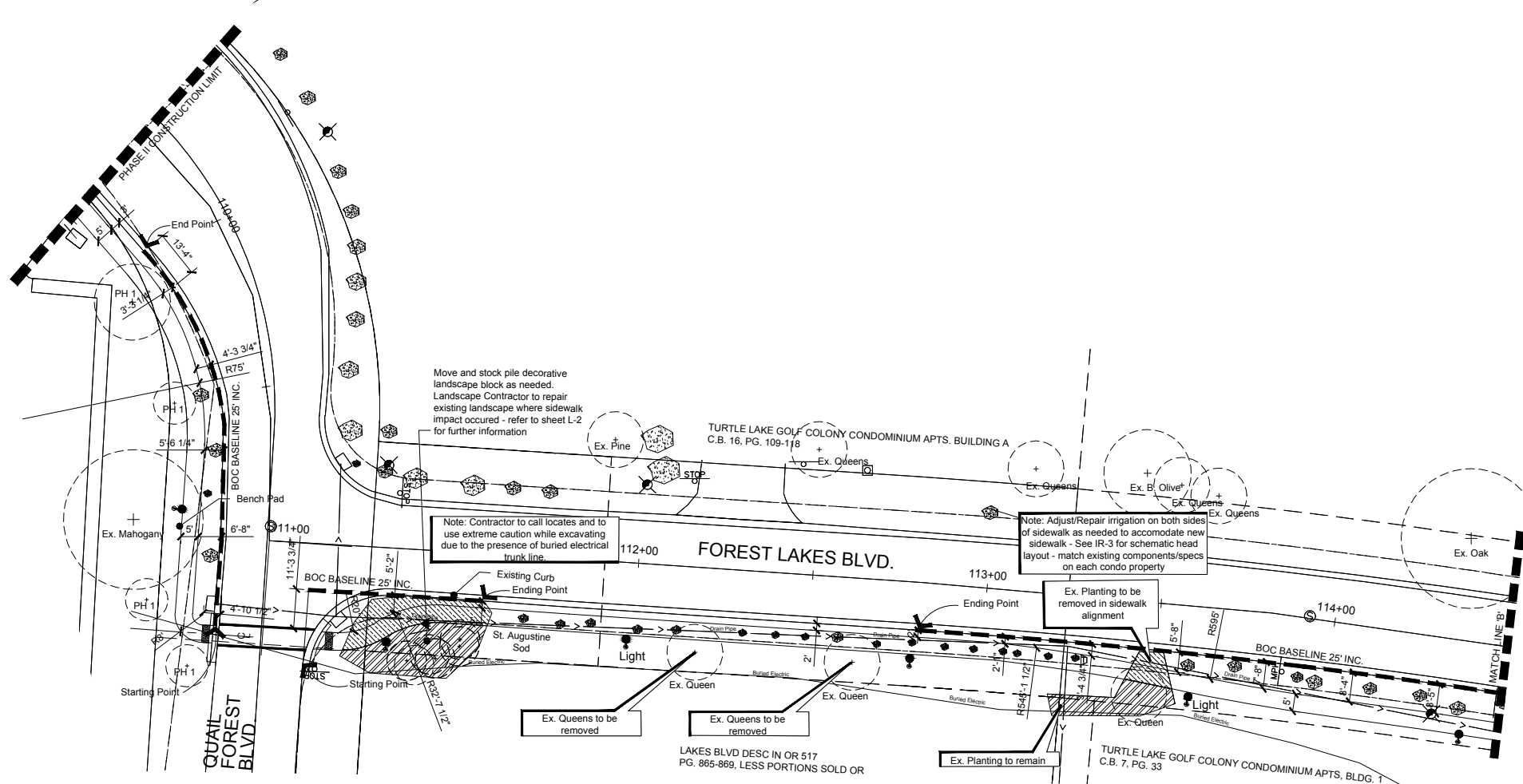
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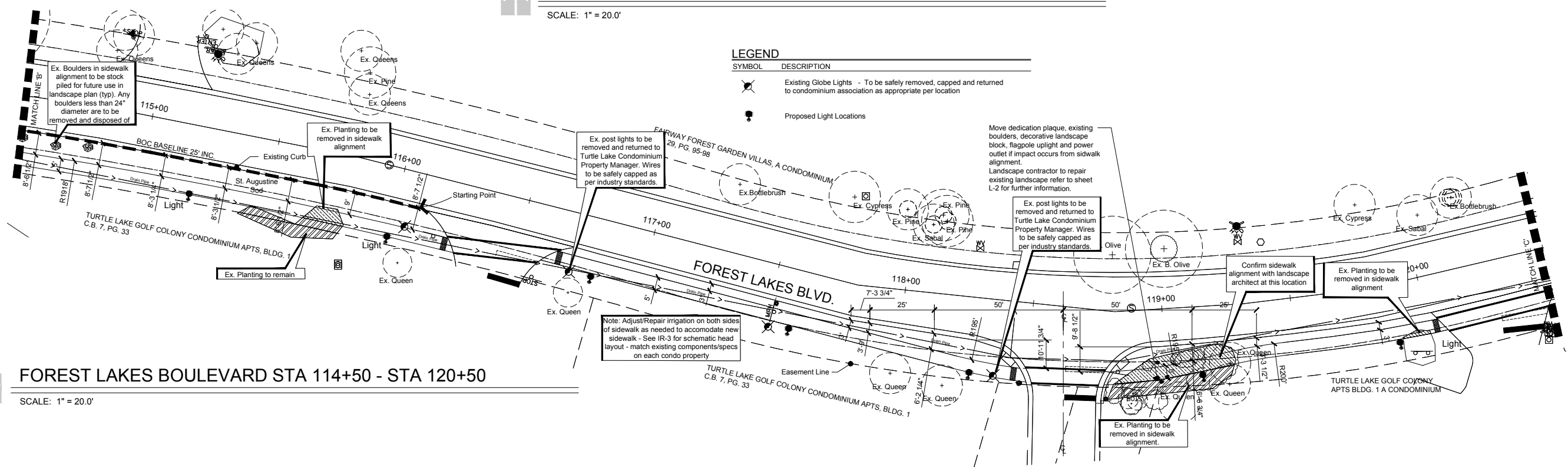
PHASE 2 SIDEWALK LAYOUT  
PLANS KEY MAP

Date: 11-07-11  
Revision Date: 02/24/12, 02/01/12, 03/01/12, 04/06/12  
Revision Date: 01/28/13 (Phase 2 100% for Submittal)  
Revision Date: 04/02/2017 (Rev. 2 Revised for Submittal)

SHEET NUMBER  
**S-1**



**FOREST LAKES BOULEVARD STA 109+75 - STA 114+50**  
 SCALE: 1" = 20.0'



**FOREST LAKES BOULEVARD STA 114+50 - STA 120+50**  
 SCALE: 1" = 20.0'

**LEGEND**

SYMBOL	DESCRIPTION
	Existing Globe Lights - To be safely removed, capped and returned to condominium association as appropriate per location
	Proposed Light Locations

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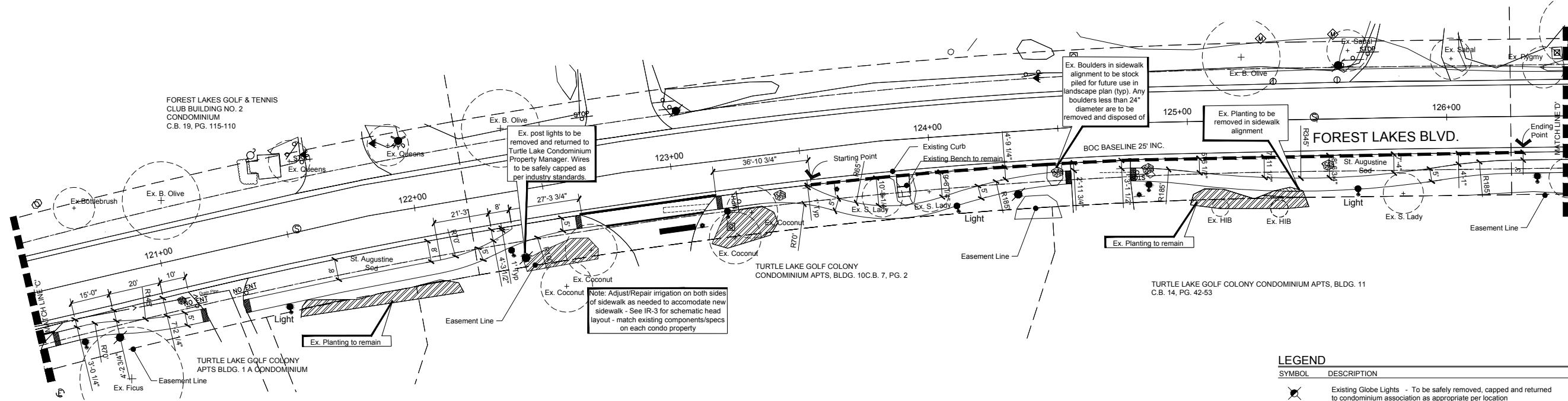
**FOREST LAKES MSTU**  
**BOND PROJECT F-58**  
 COLLIER COUNTY, FLORIDA  
 PREPARED FOR: COLLIER COUNTY D.O.T.

JOB #: 034-09  
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SCALE: 1" = 20.0'

DATE: 11-02-11  
 REVISION DATE: 02/24/11, 07/01/11, 11/11/11, 04/06/12  
 REVISION DATE: 01/13/13 (Rev. 2: 100% For Submittal)  
 REVISION DATE: 04/02/2012 (Rev. 2: Revised For Submittal)

PHASE 2 SIDEWALK LAYOUT PLAN I  
 SHEET NUMBER: **S-2**

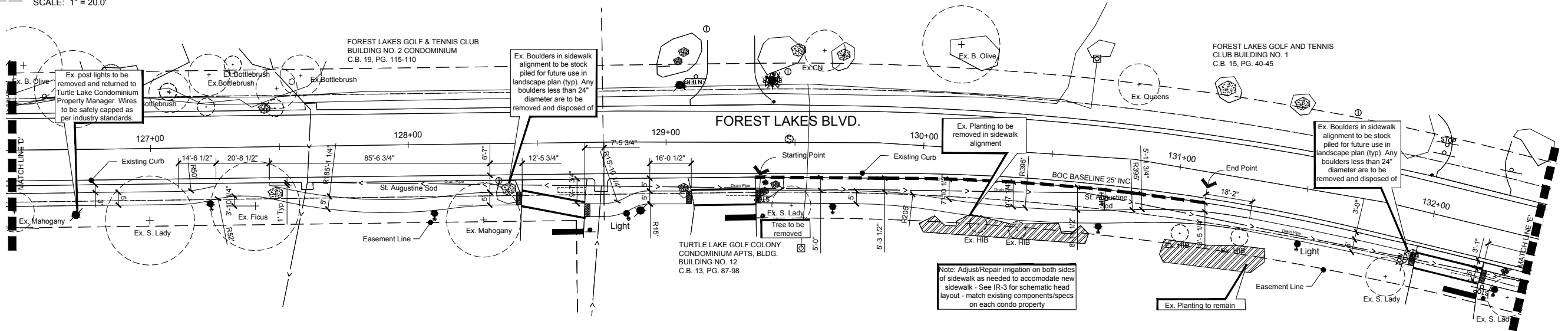


**LEGEND**

SYMBOL	DESCRIPTION
	Existing Globe Lights - To be safely removed, capped and returned to condominium association as appropriate per location
	Proposed Light Locations

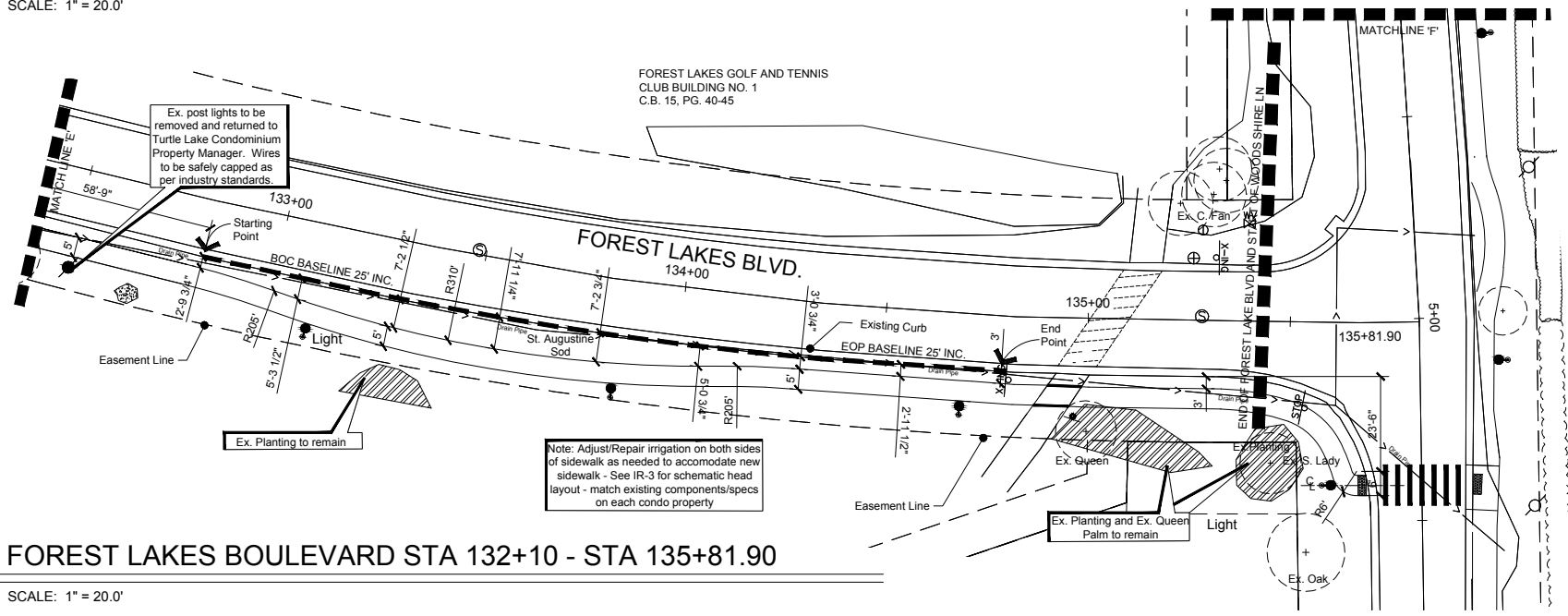
**FOREST LAKES BOULEVARD STA 120+50 - STA 126+00**

SCALE: 1" = 20.0'



**FOREST LAKES BOULEVARD STA 126+00 - STA 132+00**

SCALE: 1" = 20.0'



**FOREST LAKES BOULEVARD STA 132+10 - STA 135+81.90**

SCALE: 1" = 20.0'

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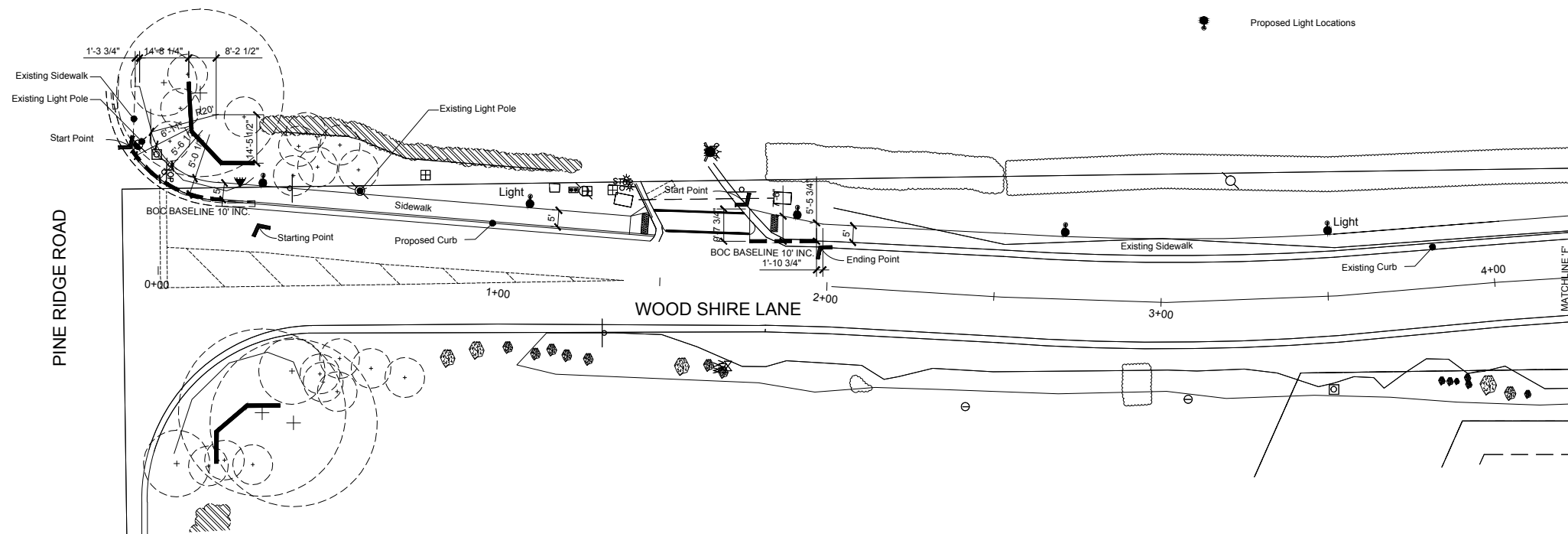
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SCALE: 1" = 20.0'

**PHASE 2 SIDEWALK  
LAYOUT PLAN 2**

Date: 11-07-11  
Revision Date: 02/24/12, 03/01/12, 03/12/12, 04/06/12  
Revision Date: 01/18/13 (Issue 2: 100% For Submittal)  
Revision Date: 04/02/2017 (Rev. 2: Revised For Submittal)

SHEET NUMBER:  
**S-3**



**LEGEND**

SYMBOL	DESCRIPTION
	Existing Globe Lights - To be safely removed, capped and returned to condominium association as appropriate per location
	Proposed Light Locations

← **WOODSHIRE LANE STA 0+00 - STA 4+25**  
 SCALE: 1" = 20.0'

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JOB #: 034-09

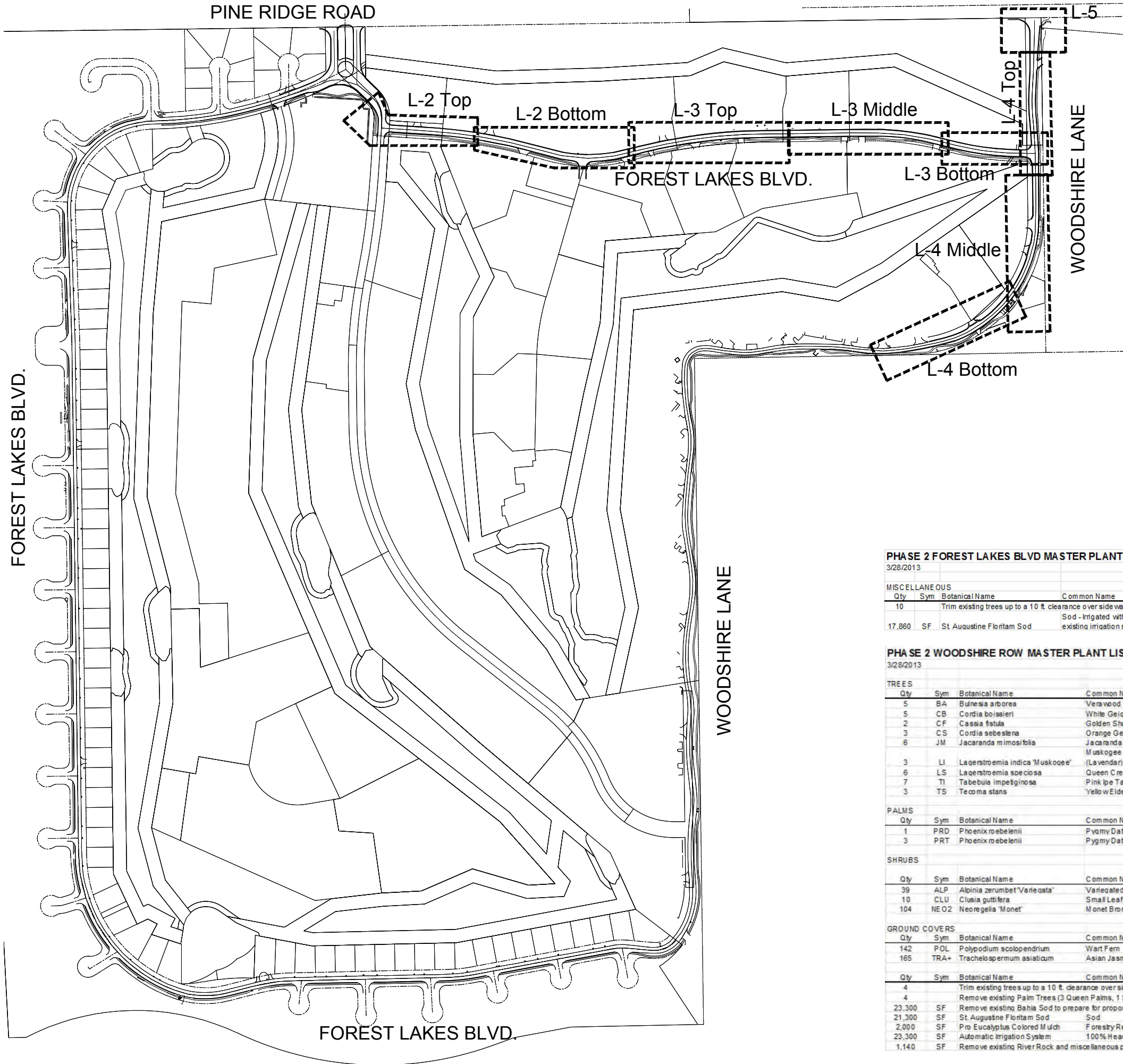
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SCALE: 1" = 20.0'

**PHASE 2 SIDEWALK LAYOUT PLAN 3**

SHEET NUMBER: **S-4**

Date: 11-07-11  
 Revision Date: 02/24/12, 02/24/12, 03/13/12, 04-06-12  
 Revision Date: 01/18/13 (Issue 2: 100% for Submittal)  
 Revision Date: 04/02/2017 (Rev. 2: Revised for Submittal)



**PHASE 2 FOREST LAKES BLVD MASTER PLANT LIST**

3/28/2013

**MISCELLANEOUS**

Qty	Sym	Botanical Name	Common Name	Specification
10				Trim existing trees up to a 10 ft. clearance over sidewalk
17,860	SF	St Augustine Floritum Sod	Sod - Irrigated with reworked existing irrigation system	Contractor to verify Qty

**PHASE 2 WOODSHIRE ROW MASTER PLANT LIST**

3/28/2013

**TREES**

Qty	Sym	Botanical Name	Common Name	Specification	Native
5	BA	Bulnesia arborea	Verawood Tree	10' oa x 5' spd, 2-2.5" cal	N
5	CB	Cordia boissieri	White Geiger	10' oa x 4' spd, 2" cal	N
2	CF	Cassia fistula	Golden Shower	14' oa x 6' spd, 3" cal	N
3	CS	Cordia sebestena	Orange Geiger	10' oa x 4' spd, 2" cal	Y
6	JM	Jacaranda mimosifolia	Jacaranda	14' oa x 6' spd, 3" cal	N
3	LI	Laqerstroemia indica 'Muskooee'	Muskogee Crepe Myrtle (Lavendar)	30 oal, 10' oa, 2" cal, M ult-trk	Y
6	LS	Laqerstroemia speciosa	Queen Crepe Myrtle	30 oal, 10' oa, 2" cal, M ult-trk	N
7	TI	Tabebuia impetiginosa	Pink Ipe Tabebuia Tree	10' oa x 4' spd, 2" cal	N
3	TS	Tecoma stans	Yellow Elder	14' oa x 6' spd, 3" cal	N

**PALMS**

Qty	Sym	Botanical Name	Common Name	Specification	Native
1	PRD	Phoenix roebelenii	Pygmy Date Palm	7' oa, double	N
3	PRT	Phoenix roebelenii	Pygmy Date Palm	7' oa, trpl, matching	N

**SHRUBS**

Qty	Sym	Botanical Name	Common Name	Specification	Spacing	Native
39	ALP	Alpinia zerumbet 'Variegata'	Variegated Shell Ginger	3 gallon 24"	42" oc	N
10	CLU	Clusia guttifer	Small Leaf Clusia	10 gallon 48"	48" oc	N
104	NEO2	Neoregelia 'Monet'	Monet Bromeliad	1 gallon 16"	30" oc	N

**GROUND COVERS**

Qty	Sym	Botanical Name	Common Name	Specification	Native	
142	POL	Polypodium scolopendrium	Wart Fern	1 gallon 10" full	24" oc	N
165	TRA+	Trachelospermum asiaticum	Asian Jasmine	1 gallon, 12" full	18" oc	N

Qty	Sym	Botanical Name	Common Name	Specification	Notes
4				Trim existing trees up to a 10 ft. clearance over sidewalk	
4				Remove existing Palm Trees (3 Queen Palms, 1 Sabal Palm)	
23,300	SF			Remove existing Bahia Sod to prepare for proposed planting and St. Augustine (Contractor to verify Qty)	
21,300	SF	St Augustine Floritum Sod	Sod	Contractor to verify Qty	
2,000	SF	Pro Eucalyptus Colored Mulch	Forestry Resources	3" Depth	
23,300	SF	Automatic Irrigation System	100% Head-to-head coverage		
1,140	SF			Remove existing River Rock and miscellaneous plantings at both monument signs and dispose of	

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COLLIER COUNTY, FLORIDA  
PREPARED FOR: COLLIER COUNTY D.O.T.

JOB #: 034-09

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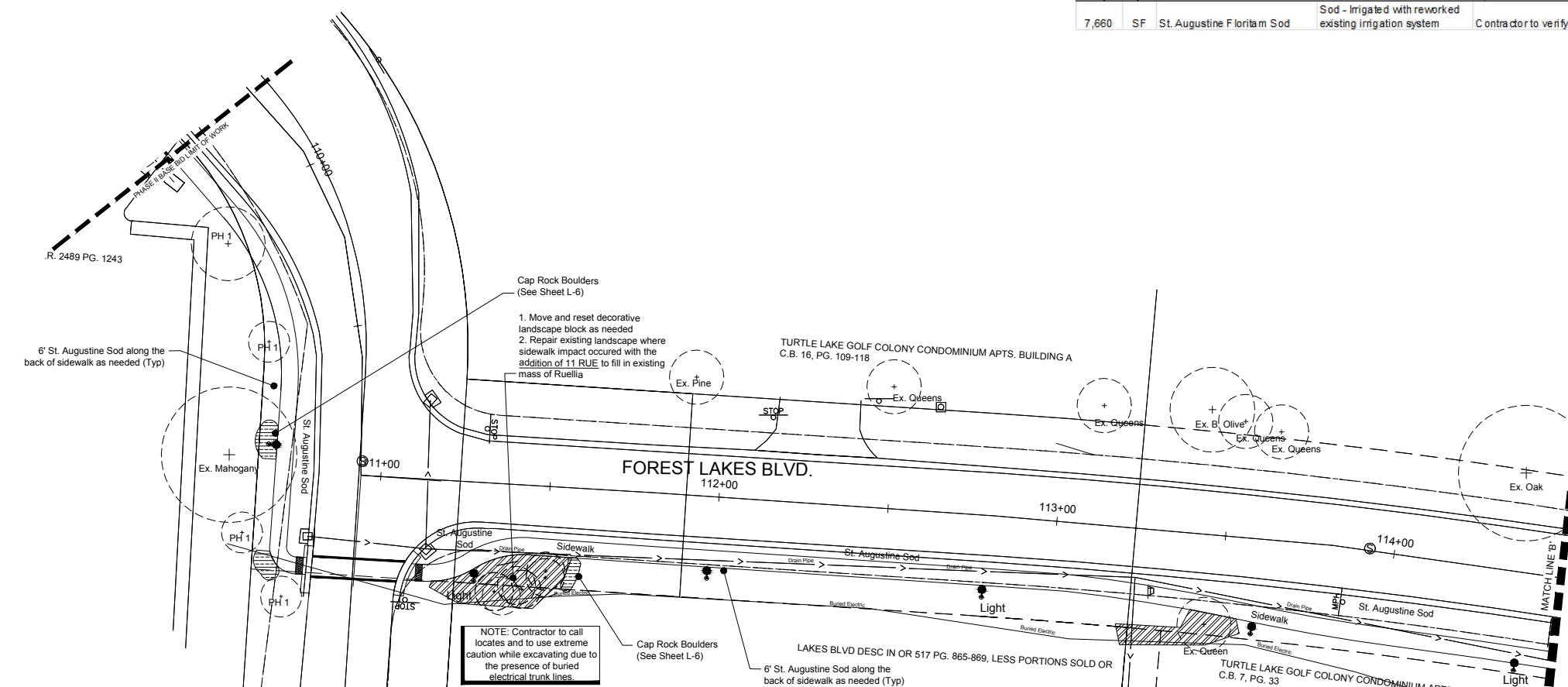
**PHASE 2 PLANTING KEY MAP**

DATE: 11/01/11  
DESIGNER: J. J. J. (J. J. J.)  
CHECKER: J. J. J. (J. J. J.)  
DATE: 01/11/11 (Phase 2 - 100% For Submission)  
DATE: 04/02/11 (Phase 2 - Revised For Submission)

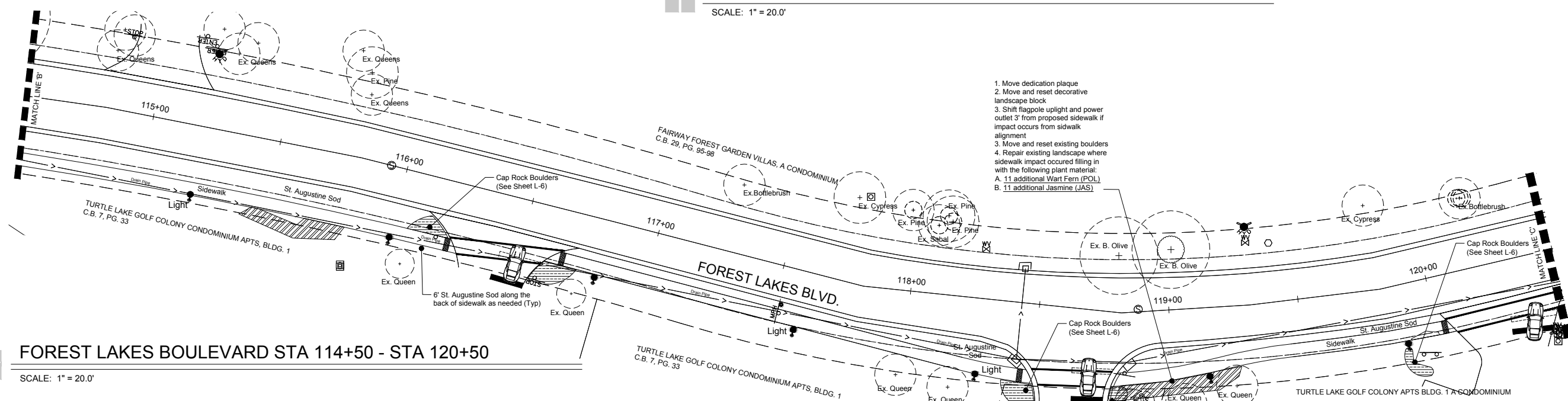
SHEET NUMBER: **L-1**

**L-2 FOREST LAKES BLVD ROW PLANT LIST**  
3/28/2013

MISCELLANEOUS				
Qty	Sym	Botanical Name	Common Name	Specification
7,660	SF	St. Augustine Floritam Sod	Sod - Irrigated with reworked existing irrigation system	Contractor to verify Qty



**FOREST LAKES BOULEVARD STA 109+75 - STA 114+50**  
SCALE: 1" = 20.0'



**FOREST LAKES BOULEVARD STA 114+50 - STA 120+50**  
SCALE: 1" = 20.0'

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COLLIER COUNTY, FLORIDA  
PREPARED FOR: COLLIER COUNTY D.O.T.

JOB #: 034-09

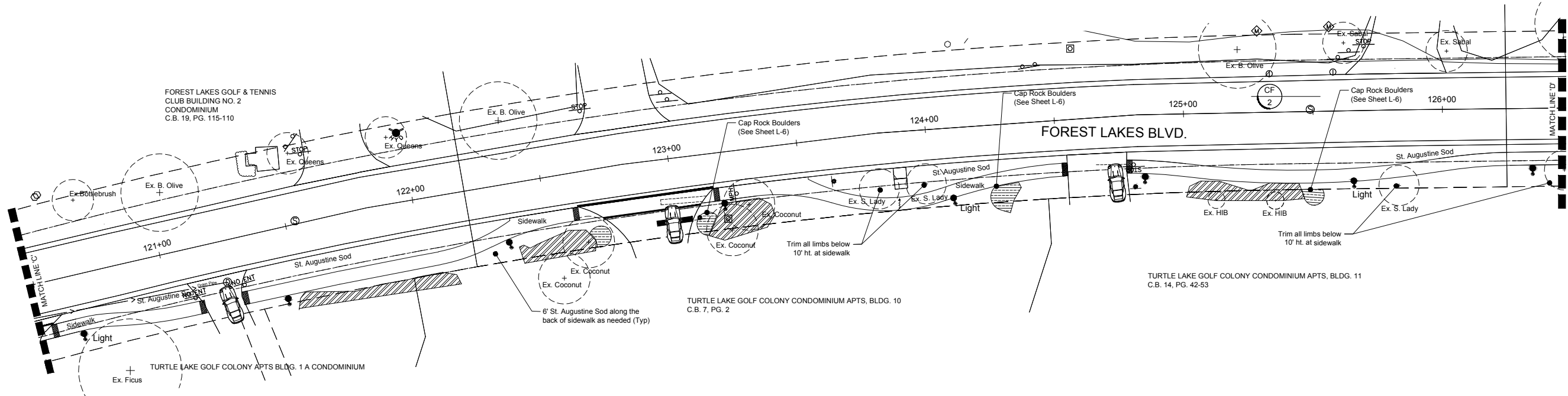
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**PHASE 2 PLANTING PLAN I**

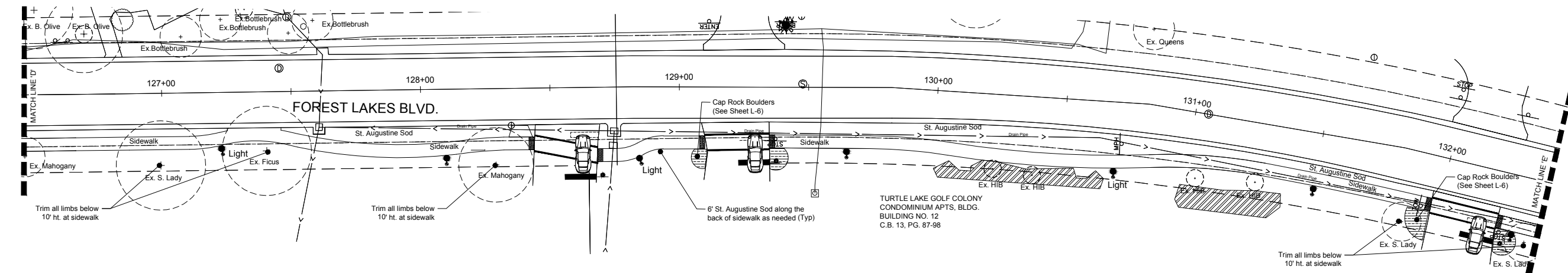
SHEET NUMBER: **L-2**

Date: 11-02-11  
Revision Date: 02/24/12, 03/01/12, 04/06/12  
Revision Date: 01/18/13 (Rev. 2: 100% For Submittal)  
Revision Date: 04/02/2013 (Rev. 2: Revised For Submittal)



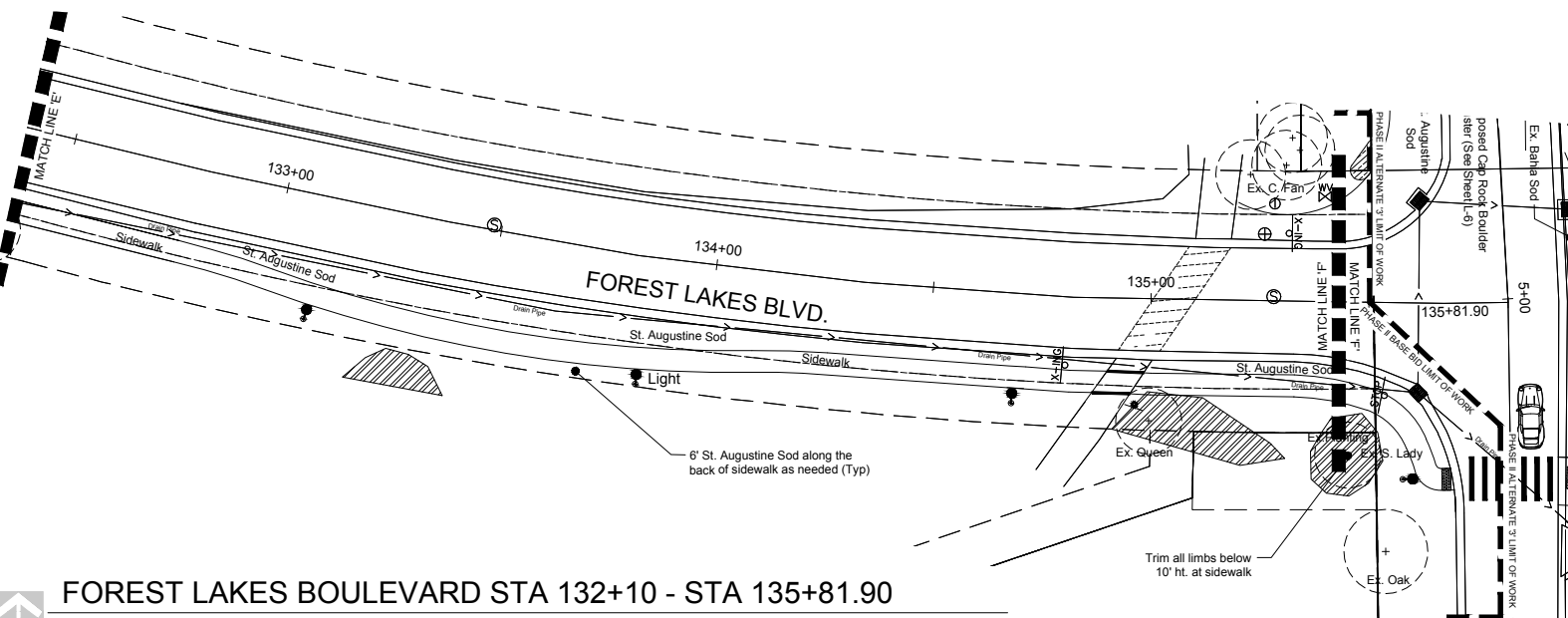
**FOREST LAKES BOULEVARD STA 120+50 - STA 126+00**

SCALE: 1" = 20.0'



**FOREST LAKES BOULEVARD STA 126+00 - STA 132+10**

SCALE: 1" = 20.0'



**FOREST LAKES BOULEVARD STA 132+10 - STA 135+81.90**

SCALE: 1" = 20.0'

**L-3 FOREST LAKES BLVD ROW PLANT LIST**

3/28/2013

MISCELLANEOUS		Botanical Name	Common Name	Specification
10		Trim existing trees up to a 10 ft. clearance over sidewalk ((2, Mahogany)(5,shady lady)(1, black olive)(1, Ficus))		
10,200	SF	St. Augustine Floritam Sod	Sod - irrigated with reworked existing irrigation system	Contractor to verify Qty

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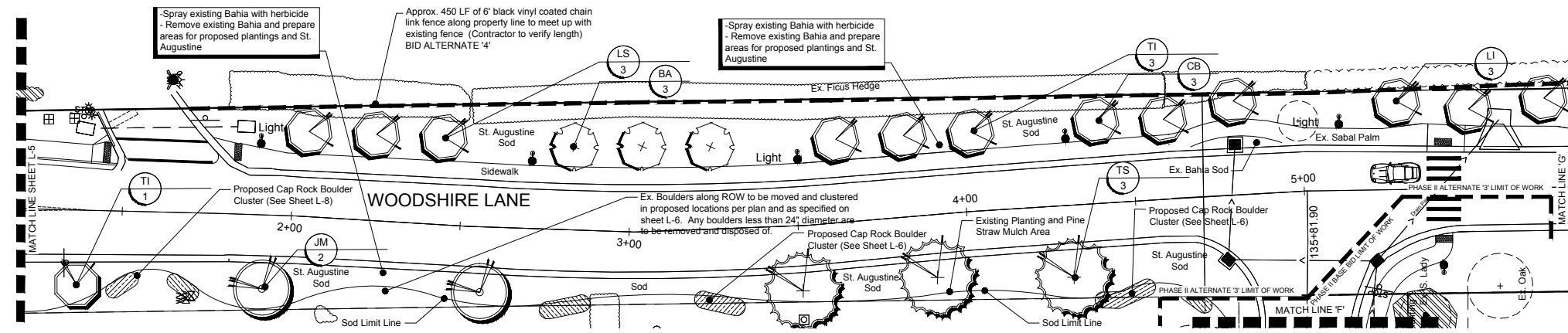
SCALE: 1" = 20.0'

**PHASE 2 PLANTING PLAN 2**

DATE: 11-07-11  
REVISED DATE: 02-24-11, 03-01-11, 1-31-12, 04-06-12  
REVISED DATE: 01-18-13 (Phase 2, 100% For Submission)  
REVISED DATE: 04-02-2017 (Rev. 2 Revised For Submission)

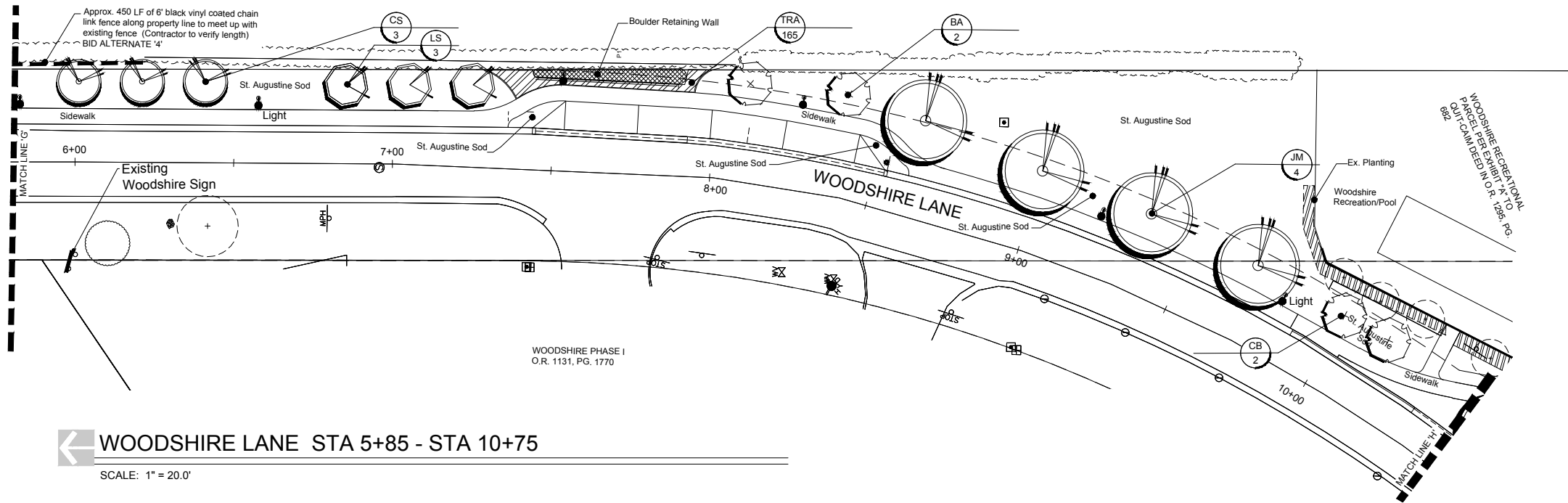
SHEET NUMBER:  
**L-3**





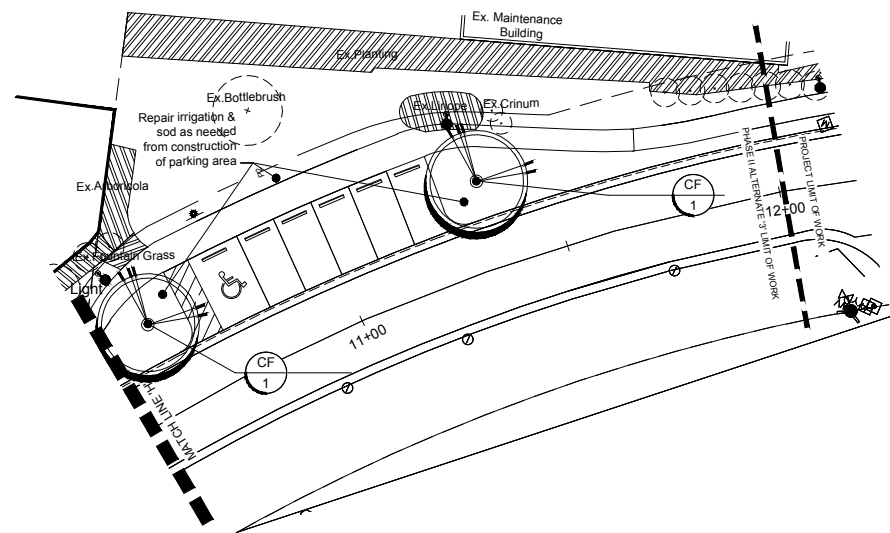
WOODSHIRE LANE STA 1+50 - STA 5+85

SCALE: 1" = 20.0'



WOODSHIRE LANE STA 5+85 - STA 10+75

SCALE: 1" = 20.0'



WOODSHIRE LANE STA 10+75 - STA 12+00

SCALE: 1" = 20.0'

L-4 WOODSHIRE ROW PLANT LIST

3/28/2013

TREES					
Qty	Sym	Botanical Name	Common Name	Specification	Native
5	BA	Bulnesia arborea	Verawood Tree	10' oa x 5" spd, 2-2.5" cal	N
5	CB	Cordia boissieri	White Geiger	10' oa x 4" spd, 2" cal	N
2	CF	Cassia fistula	Golden Shower	14' oa x 6" spd, 3" cal	N
3	CS	Cordia sebestena	Orange Geiger	10' oa x 4" spd, 2" cal	Y
3	LI	Lagerstroemia indica	Muskogee Crepe Myrtle (Lavender)	30 gal, 10' oa, 2" cal, Multi-trk	N
6	LS	Lagerstroemia speciosa	Queen Crepe Myrtle	30 oal, 10' oa, 2" cal, Multi-trk	N
6	JM	Jacaranda mimosifolia	Jacaranda	14' oa x 6" spd, 3" cal	N
4	TI	Tabebuia impeginosa	Pink Ipe Tabebuia Tree	10' oa x 4" spd, 2" cal	N
3	TS	Tecoma stans	Yellow Elder	14' oa x 6" spd, 3" cal	N
GROUND COVERS					
Qty	Sym	Botanical Name	Common Name	Specification	Native
165	TRA+	Trachelospermum asiaticum	Asian Jasmine	1 gallon, 12" full	15" oc N
MISCELLANEOUS					
Qty	Sym	Botanical Name	Common Name	Specification	Notes
3					Trim existing trees up to a 10 ft. clearance over sidewalk (3 Royal Poincianas)
18,950	SF				Remove existing Bahia Sod to prepare for proposed planting and St. Augustine (Contractor to verify Qty)
18,300	SF	St. Augustine Floritam Sod	Sod		Contractor to verify Qty
650	SF	Pro Eucalyptus Colored Mulch	Forestry Resources		3" Depth
18,950	SF	Automatic Irrigation System	100% Head-to-head coverage		

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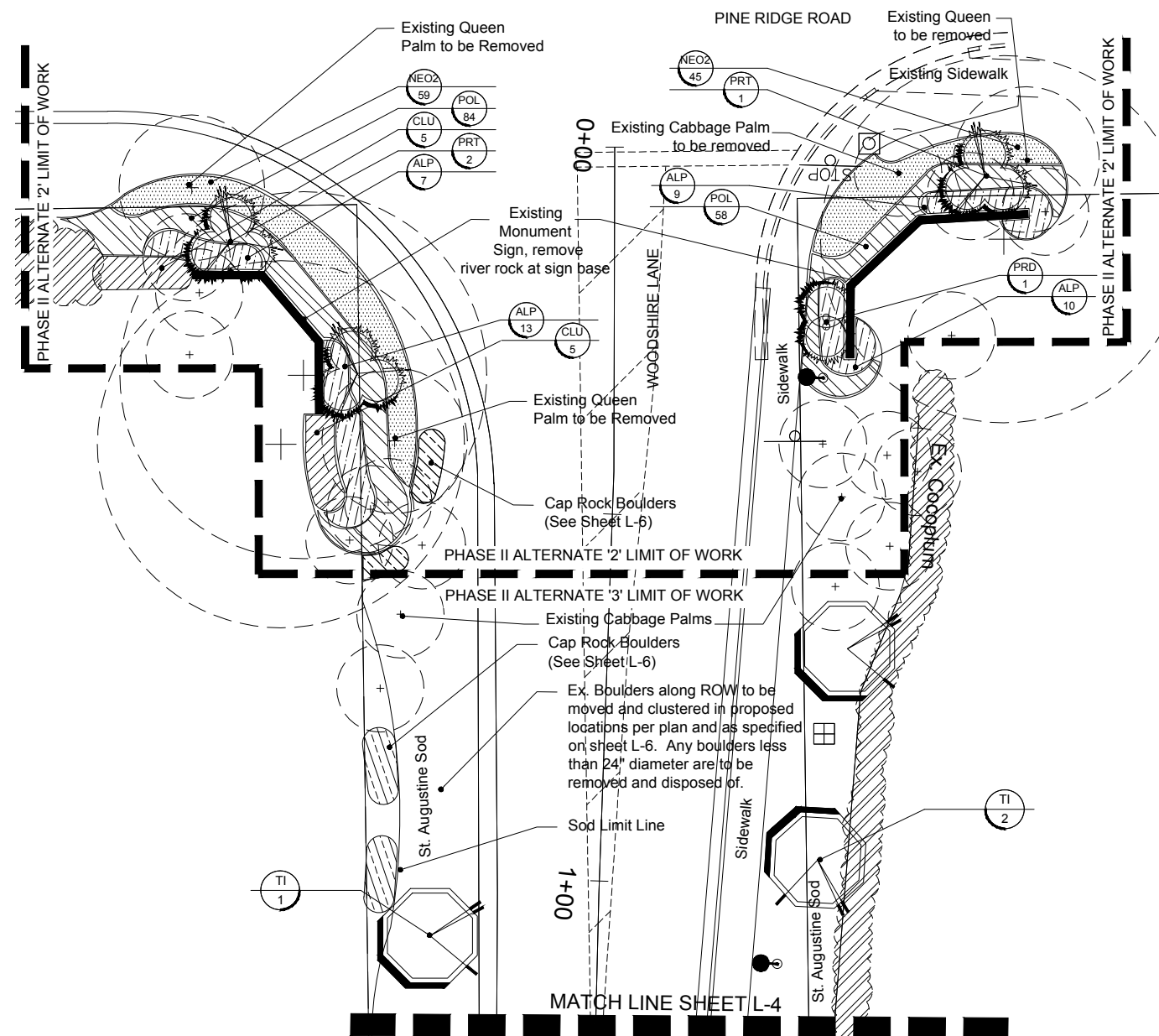
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JOB #: 034-09

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PHASE 2 PLANTING PLAN 3  
SHEET NUMBER  
L-4  
Date: 11-02-11  
Revision Date: 02/24/11, 02/01/11, 11/11/12, 04-06-12  
Revision Date: 01/28/13 (Issue 2: 100% For Submission)  
Revision Date: 04/02/2017 (Rev. 2: Revised For Submission)



**PINE RIDGE ROAD AND WOODSHIRE LANE ENTRANCE**

SCALE: 1" = 10.0'

**L-5 WOODSHIRE PLANT LIST**

3/28/2013

TREES						
Qty	Sym	Botanical Name	Common Name	Specification	Native	
3	TI	Tabebuia impetiginosa	Pink Ipe Tabebuia Tree	10' oa x 4' spd, 2" cal	N	
PALMS						
Qty	Sym	Botanical Name	Common Name	Specification	Native	
1	PRD	Phoenix roebelenii	Pygmy Date Palm	7' oa, double	N	
3	PRT	Phoenix roebelenii	Pygmy Date Palm	7' oa, tpi, matching	N	
SHRUBS						
Qty	Sym	Botanical Name	Common Name	Specification	Spacing	Native
39	ALP	Alpinia zerumbet 'Variegata'	Variegated Shell Ginger	3 gallon 24"	42" oc	N
10	CLU	Clusia guttifera	Small Leaf Clusia	10 gallon 48"	48" oc	N
142	POL	Polypodium scolopendrium	Wart Fern	1 gallon 10" full	24" oc	N
104	NEO2	Neoregelia 'Monet'	Monet Bromeliad	1 gallon 10"	30" oc	N
MISCELLANEOUS						
Qty	Sym	Botanical Name	Common Name	Specification	Notes	
1				Trim existing trees up to a 10 ft. clearance over sidewalk (1 oak)		
4				Remove existing Palm Trees (3 Queen Palms, 1 Sabal Palm)		
4,350	SF			Remove existing Bahia Sod to prepare for proposed planting and St. Augustine (Contractor to verify Qty)		
3,000	SF	St. Augustine Floritam Sod	Sod	Contractor to verify Qty		
1,350	SF	Pro Eucalyptus Colored Mulch	Forestry Resources	3" Depth		
4,350	SF	Automatic Irrigation System	100% Head-to-head coverage			
1,140	SF			Remove existing River Rock and miscellaneous plantings at both monument signs and dispose of		

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**FOREST LAKES MSTU  
BOND PROJECT F-58**  
COLLIER COUNTY, FLORIDA  
PREPARED FOR: COLLIER COUNTY D.O.T.

JOB #: 034-09

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SCALE: 1" = 20.0'



**PHASE 2 PLANTING PLAN 4**

Date: 11-07-11  
Revision Date: 02-24-12, 02-20-12, 03-14-12, 04-06-12  
Revision Date: 01-18-13 (Issue 2: 100% for Submittal)  
Revision Date: 04-02-2013 (Rev. 2: Revised for Submittal)

SHEET NUMBER  
**L-5**

**GENERAL NOTES**

- All plant material shall be Florida No. 1 or better as specified by the Department of Agriculture's Grades & Standards for Nursery Plants" Volume I & II Latest Edition.
- All specified sizes for plant material shall be considered minimum. Plants must meet or exceed these requirements.
- All plant material indicated as specimen shall be reviewed by the Landscape Architect prior to the installation.
- The contractor shall verify location of all plant material on site with the landscape architect before planting. All tree and palm locations shall be approved by the landscape architect prior to planting.
- Mulch, plants, seeding, soil and sod quantities, as specified in the plant schedule shall be considered estimated only, subject to lump sum bids, field counts and/or measurements.
- Planting beds or areas containing limerock or otherwise unsuitable growing material as determined by landscape architect or project manager shall have the material removed to an 18 inch depth and then replaced with clean native topsoil or specified growing quality planting material before plant installation.
- The contractor shall verify the location and mark of all overhead and underground utilities on site, and notify the landscape architect of any possible conflicts before starting any work.
- The bidder shall provide unit and total prices for all items listed in the schedules or specified within the plans. Items noted by others or (N.I.C.) are not within the landscaping and irrigation contract.
- The contractor shall provide to the Landscape Architect three (3) copies of the "As-Built/Record Drawings" Plan prints to include highlighting any changes to the approved permitted plans.
- The Landscape Architect is not responsible for the means and method of installation and/or construction by the contractor or the subcontractor.
- All proposed and/or preserved existing landscaping shown on the plans requires continuous horticultural maintenance services. These services are to be provided by the owner or the owner's representatives for proper plant establishment and continued proper and/or controlled growth of the above ground foliage and underground root system.
- All construction or installation shall in compliance with these plans, contract documents and the FDOT "Roadway and Traffic Design Standards" January 2004 Indexes, #104, 300, 545, 546, 600, 610, 611, 612, 613, 617, 622, 623, 625, 17721 and the FDOT "Plans and Preparation Manual" Volume 1, Chapter 2, Section 2.11.5 & 2.12. Latest Editions.

- All Directional Boring of Conduit Shall comply with the FDOT "Utility Accommodation Manual," June 1993 Doc. No. 7-10020-001-C, or Latest Edition.
- The Construction Bid Prices shall include providing inspection services and certifications of density and concrete testing performed by independent, certified and FDOT approved laboratory or firm.
- All products or materials to be supplied for the project must have samples submitted for approved laboratory or firm.
- All products or materials to be supplied for the project must have samples submitted for approval as directed by the landscape architect or project manager.
- All large canopy trees and palms shall be installed so as to try and maintain a 5 foot separation and minimally a 2.5 separation from underground utilities.
- Installed bid cost for individual canopy trees, palms, or large shrubs planted in turf areas shall include planting soil mix per specifications.
- The Landscape Contractor is to prepare and submit, M.O.T. (Maintenance of Traffic) Plan in written and graphic format.
- Existing manholes, valve boxes, etc., within landscape areas must have access maintained.
- The landscape architect is not responsible for the site safety, means or methods of installation and/or construction by the contractor or owner.
- Site safety, site maintenance of traffic during construction or site conditions during construction or inspections or observations for above listed items before, during, and after the construction or installation process, call for in these plans, is not the responsibility of the landscape architect.
- By approval and use of these plans and/or specifications, the owner and contractor acknowledges the landscape architect is not hired or providing services for and will not be providing inspections or observations for the construction site conditions, safety or maintenance of traffic for, during, or after the construction process and the responsibility for site conditions, safety, or maintenance of traffic are the responsibility of the owner and/or the contractor performing the work.
- All county listed exotic plant species to be removed from project area.

**WATERING BAG SPECIFICATIONS**

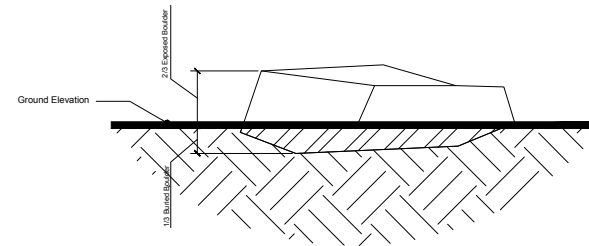
- Contractor to fill watering bags once every four weeks for 6 months following planting installation. (Contractor to provide a unit cost to continue filling water bags on a monthly basis if requested)
- Contractor to clean emitter weep holes once a month to remove debris and prevent clogging as needed.
- Contractor to refer to [www.treecamel.com/Ooze\\_Tube.com](http://www.treecamel.com/Ooze_Tube.com) for more information if needed.

**EROSION CONTROL NOTES**

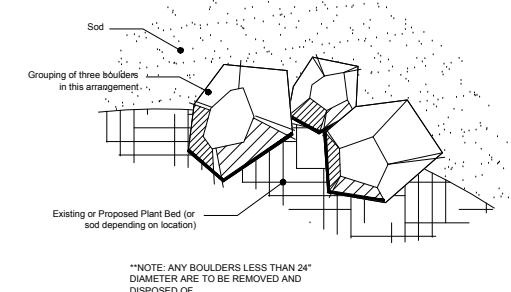
- The Contractor shall execute all measures necessary to limit the transport of sediment outside the limits of the project to the volume and amount that exist prior to the commencement of construction. This condition will be satisfied for the total anticipated construction period. Provision must be made to preserve the integrity of and capacity of check weirs, sediment basins, slope drains, grading patterns, etc., required to meet this provision throughout the life of the construction. The contractor shall provide hay bales, silt barriers, temporary grassing, etc., as required to fully comply with the intent of this specification.
- All features of the project shall be constructed to prevent erosion sediment and shall be maintained during the life of the construction so as to function properly without the transport of sediments outside the limits of the project.
- Erosion control at all inlet drainage structures during construction shall be done in accordance with Standard Index no. 102.
- If the Prime Contractor has removed erosion control devices due to completion of roadway work, new erosion control devices must be installed by the landscape contractor.
- Quantity of hay or straw bales is for estimation purposes only.
- Contractor's attention is directed to the special provisions of this contract, which require the preparation, and approval of the erosion control plan that addresses the prevention, control, and abatement of water pollution.

**SITE GRADING AND SOIL PREPARATION**

- The contractor shall spray existing turf areas which are to become irrigated landscape areas with contact herbicide for a 100% kill as approved by the landscape architect and maintain the project areas weed free throughout landscape construction until final acceptance.
- Contractor to then install irrigation mainline and wiring and stub up valve locations to within eight inches of existing surface grade, marking locations on the curb for reference.
- Contractor to remove, unsuitable excavated soils and excess fill.
- Prior to planting, contractor to fine grade landscape areas to proposed uniform profile.
- Contractor to remove all debris/rocks larger than 1" in diameter from within the top 4" of the finished grade.
- Final landscape areas grades must meet final approval by landscape architect.



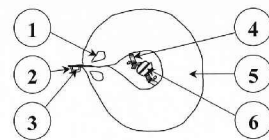
TYPICAL BOULDER INSTALLATION DETAIL SECTION  
SCALE: NTS



TYPICAL THREE BOULDER ARRANGEMENT PLAN  
SCALE: NTS

NOTE: ALL LARGE TREES (3" CAL.) TO RECEIVE 35 GALLON OOZE TUBE (DARK CHOCOLATE) WITH TWO EMITTERS, AND ALL SMALL TREES (2" CAL) TO RECEIVE 25 GALLON OOZE TUBE (DARK CHOCOLATE) WITH ONE EMITTER. FOR SUPPLEMENTAL INSTALLATION METHODS REFER TO [WWW.TREECAMEL.COM/OOZE\\_TUBE.HTM](http://WWW.TREECAMEL.COM/OOZE_TUBE.HTM)

**SECTION AA'**



**DETAIL NOTES:**

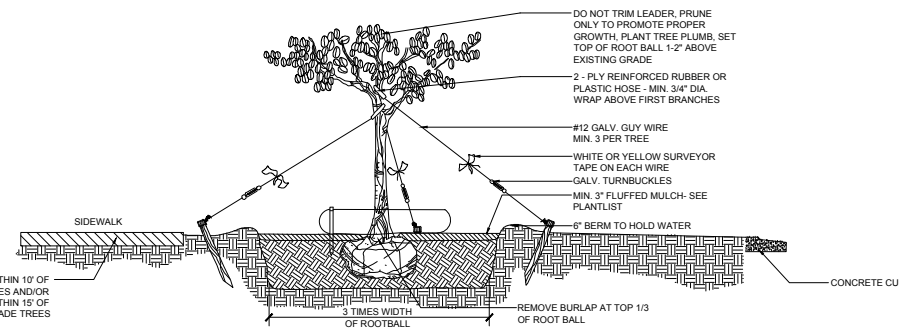
- FILL / VENT HOLES (TYP. BOTH ENDS)
- STAKE HOLDING SLOTS (TYP. BOTH ENDS)
- 30° L.G. SURVEYOR STAKE (SUPPLIED WITH OOZE TUBE). NOTE: INSTALL AT THE HIGHEST POINT OF ELEVATION.
- DRIP EMITTER PLACEMENT (SEE TOP VIEW - SECTION "AA'")  
INSTALL AT OR NEAR BOTTOM OF BAG WITH DISCHARGE PARALLEL TO GROUND.
- OOZE TUBE - 25, 35, OR 45 GALLON CAPACITY (CIRCLE ONE).
- TREE CROSS SECTION
- X" = 18" 25 GALLON, 21" 35 GALLON, 24" 45 GALLON

NUMBER OF EMITTERS PER TREE: \_\_\_\_\_ (TYPICAL = 2)

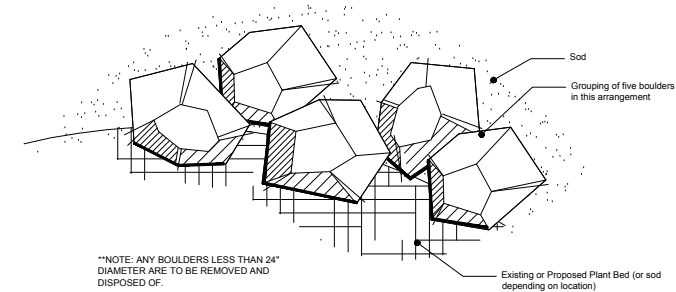
**OOZE TUBE INSTALLATION DETAIL**

NOT TO SCALE

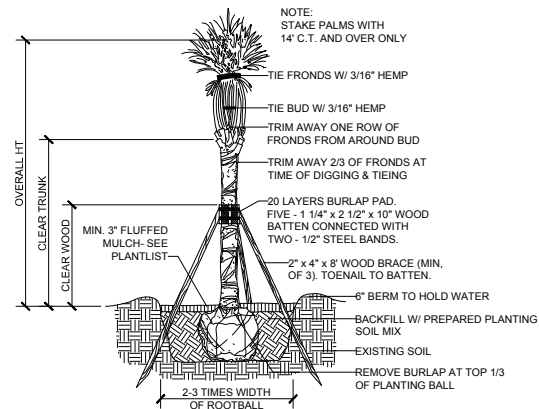
NOTE: TO LOCATE AN OOZE TUBE DISTRIBUTOR, CONTACT  
PQ PARTNERS, LLC @ (770)924-4191



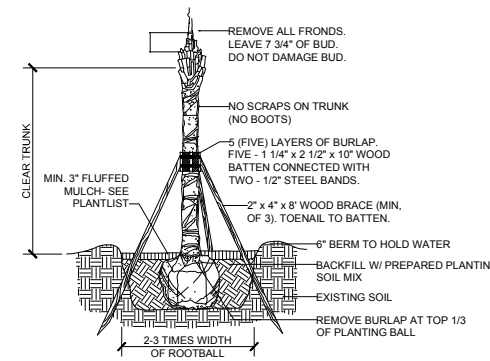
TYPICAL LARGE TREE PLANTING DETAIL  
SCALE: NTS



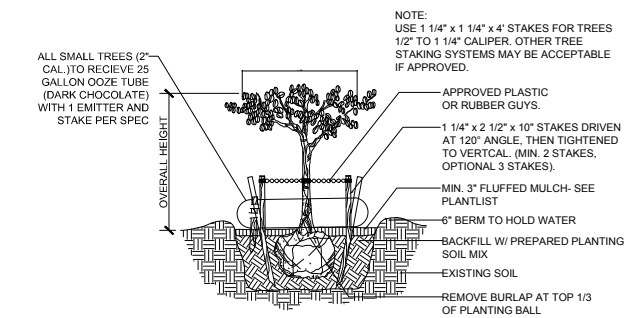
TYPICAL FIVE BOULDER ARRANGEMENT PLAN  
SCALE: NTS



PALM TYPICAL PLANTING DETAIL



SABAL PALM PLANTING DETAIL



SMALL TREE PLANTING DETAIL

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FOREST LAKES MSTU  
BOND PROJECT F-58  
COLLIER COUNTY, FLORIDA  
PREPARED FOR: COLLIER COUNTY D.O.T.

JOB #: 034-09

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SCALE: 1" = 20'0"



PHASE 2  
PLANTING SPECIFICATIONS

Date: 11-07-11  
Revision Date: 01-24-11, 01-20-11, 1-31-12, 04-06-12  
Revision Date: 01-18-13 (Rev. 2: 100% For Submittal)  
Revision Date: 04-02-2017 (Rev. 2: Revised For Submittal)

SHEET NUMBER  
L-6



Starburst - 20000000

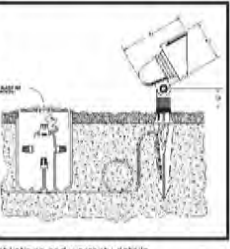
- SPECIFICATIONS**
- Voltage: 12 & 24 volt
  - Construction: Cast Brass
  - Weight: 4.1 Lbs.
  - Finish: Weathered brass (optional finishes available)
  - Wire: 20' Intelli-Flex wire factory connected
  - Socket: (Dual) Beryllium Copper, pre-greased
  - Wattage: Maximum 35 Watts
  - Connections: Anti-Arature Migration connections
  - Lens: Clear Lens and Designer lens kit
  - Mounting: Gravity Stake 1/2-14 NPSM
  - Lifetime Warranty



Wall Washer Stake Mounted Wall Washer

Capable of this most versatile installation application, the Starburst functions as both a directional up-light or a wall washer fixture. This 8 in. x 10 in. fixture features an unprecedented dual socket mount system allowing you to install a vertical light for directional lighting or a horizontal Astro-Brute lamp for wall washing without necessary. Both lamps are included with every Stakestar for maximum design versatility.

PATENT # 6,989,877



**Project Data:**

Light Plan:	Site Location: (Project Name)
Project Address:	Customer: (C/O)
Light Type:	Designer: (C/O)
Color:	Company: (C/O)

UNIQUE LIGHTING SYSTEMS, INC.  
1240 Sherman Way  
Sausalito, CA 94965  
415.455.4831  
www.unique-lighting.com

LB

**MDL CORP. LOW VOLTAGE POWER MODULE FOR LANDSCAPE LIGHTING**  
Designed for Low Voltage Lighting  
Made in U.S.A.

These state of the art power modules are equipped with unlimited features. They are designed and developed by experienced landscape engineers to cover all aspects of landscape lighting.

- FEATURES**
- 95% Regulation - It provides lower voltage drop from no load to full load.
  - Higher Efficiency - It is translated in lower loss and consequently energy saving.
  - Up to 13V multi-tap secondary on all wattage models.
  - Output voltages: 12/13/14/15 volts. (Custom output voltage configurations are available).
  - Transformer can be loaded up to the maximum rating on each tap and does not have to be de-rated.
  - Heavy encapsulated transformer resulting in silent operation, and eliminating long term corrosion and rusting of the components.
  - Auto-resetting in-line primary overload protection.
  - In-line secondary magnetic breakers to protect against short circuit in the lighting system.
  - Extra-large terminal blocks for ease of installation, which will accommodate up to eight AWG #10 flexible wire.
  - Optional pluggable photocell and timer sockets, which allow you to add a timer and/or a photocell at anytime.
  - Limited current timer receptacle accommodates all types of timers regardless of timer wattage capacity, therefore allowing the timer contacts to last longer. This feature also enables the use of NITE units, on all models up to 1200W.
  - Limited current photocell plug accommodates all types of photocells regardless of wattage capacity; thus enabling remote photocells to be run at long distances with a pair of small gauge wires.
  - Primary current loop allows measurement of the primary amperage under full load, which is necessary to be performed upon completion of installation.
  - Complies with article 411 of the National Electric Code.
  - UL approved 1430 transformer.
  - Made in the U.S.A.



**MULTI VOLT UNITS**

PART NO.	WATTAGE	LENGTH	WIDTH	DEPTH
30300-PTP	300 WATTS	17.0"	5-1/4"	5-1/4"
30800-PTP	800 WATTS	17.0"	6-1/2"	5-1/2"
30900-PTP	900 WATTS	17-1/4"	8.0"	6-3/4"
31200-PTP	1200 WATTS	17-1/4"	8.0"	6-3/4"

MDL Corp. 11600 Caroline Road, Philadelphia PA, 19154  
1-315-673-4844

TF

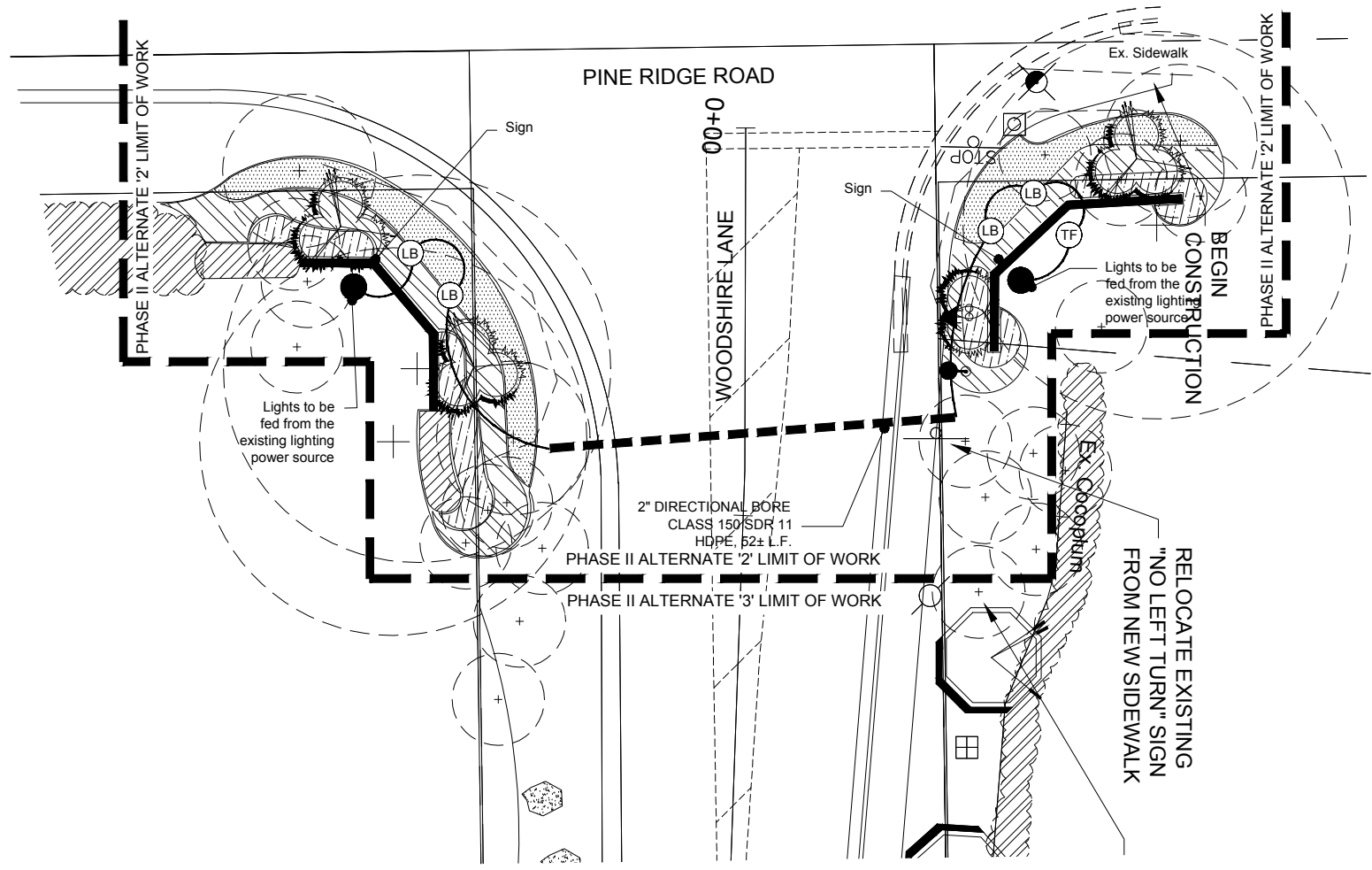
**MASTER LIGHTING LEGEND**

SYMBOL	QTY	TYPE	SPECIFICATIONS
LB	4	Sign Light	Unique, Odyssey Line, Starburst 50W Xenon Composite Flood
TF	1	Transformer	MDL Corp. Stainless 12-14V Transformers 30300-PTP
No Symbol	160	Wire	Light to Light Wire

--- +/- 52 Directional Bore 2" Sleeve Class 150 SDR 11 HDPE, 52± L.F.

**LIGHTING NOTES**

- Lighting to be controlled by integral timer
- All lighting to be installed as per manufacturer's specifications
- Contractor responsible for providing a complete operating lighting system
- Transformers are to be hard wired to power source



**PINE RIDGE ROAD AND FOREST LAKES BOULEVARD ENTRANCE**

SCALE: 1" = 10.0'

Scott Windham, ASLA  
Landscape Architect, MA 0001516



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**FOREST LAKES MSTU  
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COLLIER COUNTY, FLORIDA  
PREPARED FOR: COLLIER COUNTY D.O.T.**

JOB #: 034-09

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SCALE: 1" = 10.0'

**PHASE 2 LIGHTING PLAN & SPECS**

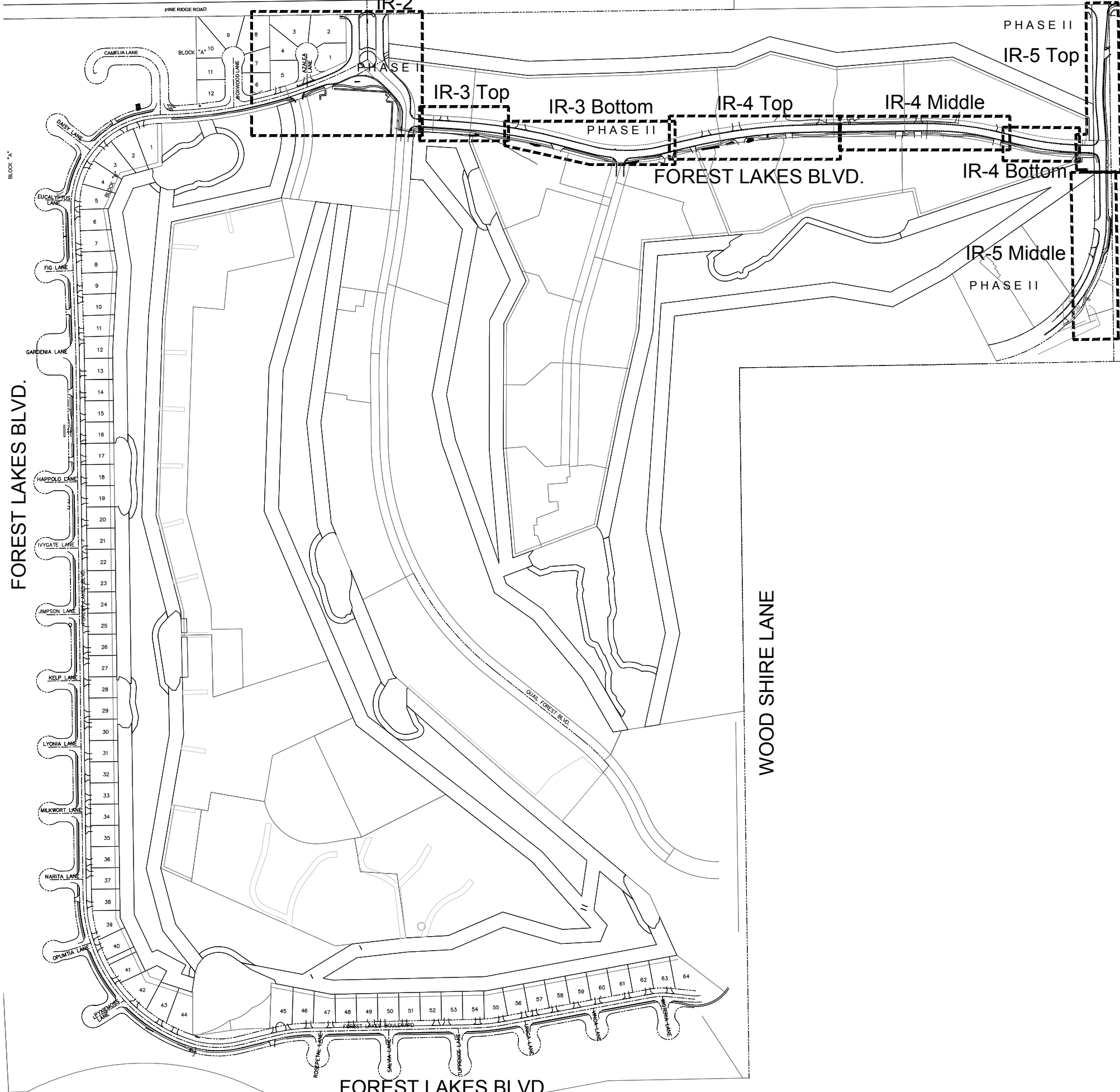
Date: 11/07/11
Revision Date: 12/21/11, 12/21/11, 1/11/12, 04/05/12
Revision Date: 07/04/12 (Phase 2, 100% RFI Submittal)
Revision Date: 04/03/2012 (Rev. 2, Revised RFI Submittal)

SHEET NUMBER:  
**LT-1**

PINE RIDGE ROAD

IR-2

IRRIGATION LEGEND



SYMBOL	DESCRIPTION	EST. QTY.
WM	Irrigation system source: Proposed 2" Irrigation effluent water meter by the City of Naples effluent water service. Capacity Requirements: 1- 125± GPM & 60± PSI.	1+/-
HDM 3"	Phase II (Woodshire Lane System) Irrigation Master Valve/Flow Meter, Bernad IR-3-910P-PRV, 3" hydrometer valve with electric solenoid and pressure reducing pilot, with 3" flanged connections. Connect to controller to function as a master valve. Set pressure regulator/reducing pilot to 60± PSI. Install within a polymer concrete valve box. Include all materials and labor necessary for installation.	1+/-
C1	Electric service wire in 1.25" SCH 80 PVC conduit from power pole to controller C2 location. Provide all hardware, labor and service necessary.	REFER TO BID SCHEDULE
C2	Irrigation Controller C1: Hunter ACC-18-PP, ACC Series 18 station controller for multiple wires control technology, with plastic cabinet and pedestal. Provide electric service from adjacent power pole. Refer to plan for controller and power pole location.	1
C2	Irrigation Controller C2: Hunter ACC-99D-PP, ACC Series Two-Wire Decoder Controller with capacity for up to 99 stations. Plastic cabinet and pedestal. Provide electric service from adjacent power pole. Refer to plan for controller and power pole location.	1
IC-6	Irrigation Controller C2 6 Station Decoder: Hunter ICC-600, ACC Series 6 station decoder with surge suppression and ground wire. Provide connectors and connection method(s) in accordance to the latest manufacturer specifications.	REFER TO BID SCHEDULE
IC-4	Irrigation Controller C2 4 Station Decoder: Hunter ICC-400, ACC Series 4 station decoder with surge suppression and ground wire. Provide connectors and connection method(s) in accordance to the latest manufacturer specifications.	REFER TO BID SCHEDULE
IC-2	Irrigation Controller C2 2 Station Decoder: Hunter ICC-200, ACC Series 2 station decoder with surge suppression and ground wire. Provide connectors and connection method(s) in accordance to the latest manufacturer specifications.	REFER TO BID SCHEDULE
NO SYMBOL	Page P7072D-REV11, Maxi-Wire 12-2, 12 Gauge Special irrigation control wire for Two-Wire control technology. Provide connectors and other elements needed to function in accordance to manufacturer specifications.	REFER TO BID SCHEDULE
NO SYMBOL	Connections and materials necessary for controllers installation and operation. General Contractor to provide dedicated single and/or 3 phase power as required in conduit to electrical equipment location(s), and provide direct wiring by electrical contractor.	REFER TO BID SCHEDULE
RS	Hunter MWS-FR, Mini-Weather station with freeze sensors, mounted on a 15' long x 1-1/4" diameter SCH 80 PVC pole.	REFER TO BID SCHEDULE
6"	6" HDPE-Class 150 SDR11 Extra molecular weight HDPE irrigation sleeves, installed using directional boring procedures.	REFER TO BID SCHEDULE
4"	4" HDPE-Class 150 SDR11 Extra molecular weight HDPE irrigation sleeves, installed using directional boring procedures.	REFER TO BID SCHEDULE
3"	3" HDPE-Class 150 SDR11 Extra molecular weight HDPE irrigation sleeves, installed using directional boring procedures.	REFER TO BID SCHEDULE
4" HDPE	4" HDPE-Class 150 SDR11 Extra molecular weight HDPE irrigation supply line. Connect to PVC sections with HDPE to PVC Transitional gasket interconnecting fittings.	REFER TO BID SCHEDULE
3" HDPE	3" HDPE-Class 150 SDR11 Extra molecular weight HDPE irrigation main line. Connect to PVC sections with HDPE to PVC Transitional gasket interconnecting fittings.	REFER TO BID SCHEDULE
4" HDPE	4" HDPE to PVC Mechanical joint coupling with transitional gasket interconnecting fittings.	REFER TO BID SCHEDULE
3" HDPE	3" HDPE to PVC Mechanical joint coupling with transitional gasket interconnecting fittings.	REFER TO BID SCHEDULE
4" Supply	Ductile Iron Pipe 4"x3"x3" tee with Megalug MJ connections. Provide 3"x2" reducer, Thrust block.	REFER TO BID SCHEDULE
3" Main	4" PVC 1120-1220 Class 200 gasketed irrigation main line with Harco DIP fittings. Pantone Purple 522C.	REFER TO BID SCHEDULE
2" Submain	3" PVC 1120-1220 Class 200 gasketed irrigation main line with Harco DIP fittings. Pantone Purple 522C.	REFER TO BID SCHEDULE
1120-1220	1120-1220, Class 200 PVC Lateral line pipe. Pantone Purple 522C. Refer to plan for sizes.	TBD
IP	Irrigation Main line blow off: 3" & 1-1/4" D.I.P. & SCH 80 Piping & Fittings, 3" & 1-1/4" manual gate valve, valve boxes & other elements as per detail.	3+/-
IP	Irrigation main line pressure check point, refer to detail for elements description, and assembly illustration.	REFER TO BID SCHEDULE
PR	Waterman AA-6, 2" Pressure relief valve. Include Jumbo valve box; isolation valve; Corrugated plastic sleeve; Discharge gravel sump with valve box, filter fabric, discharge piping and interconnecting fittings.	REFER TO BID SCHEDULE
AV	Waterman AV-150, 1.5" Air vacuum release valve. Include Jumbo valve box & extensions; isolation valve; Corrugated plastic sleeve; Discharge gravel sump with valve box, filter fabric, discharge piping and interconnecting fittings.	REFER TO BID SCHEDULE
MJ619-RW-S0N	Nibco MJ619-RW-S0N, 619 Series 4" epoxy coated isolation gate valve with non-rising stem, flanged.	REFER TO BID SCHEDULE
MJ619-RW-S0N	Nibco MJ619-RW-S0N, 619 Series 3" epoxy coated isolation gate valve with non-rising stem, flanged.	REFER TO BID SCHEDULE
M514-200	Matco 514-200, 514 Series 2" brass isolation gate valve.	REFER TO BID SCHEDULE
ICV-100-FS	Hunter ICV-100-FS, ICV Series 1" Electric Solenoid Valve with Filter Sentry feature. Include DBR wire connectors; Yellow identification and purple warning plastic tags, manufactured by Christie Industries; Filter fabric and gravel. Install within a Jumbo valve box, 2 valves per box.	REFER TO BID SCHEDULE
I-20	Hunter I-20-12P-ADJ, I-20 Series 12" high pop-up rotary gear head. Refer to plan for model, nozzle size, and coverage pattern.	REFER TO BID SCHEDULE
I-20	Hunter I-20-6P-ADJ, I-20 Series 6" pop-up rotary gear head. Refer to plan for model, nozzle size, and coverage pattern.	REFER TO BID SCHEDULE
PROS-12P-XX	Hunter PROS-12P-XX, Hunter Pro-Spray Series 12" High Pop-up spray head body with Toro Precision series nozzles. as specified per plan. Refer to plan for patterns & nozzle size/range.	REFER TO BID SCHEDULE
PROS-6P-XX	Hunter PROS-6P-XX, Hunter Pro-Spray Series 6" Pop-up spray head body with Toro Precision series nozzles. as specified per plan. Refer to plan for patterns & nozzle size/range.	REFER TO BID SCHEDULE
SSTRP	Hunter Pro-Spray Series 12" High Pop-up spray head body with Toro Precision series 4X30 Sidestrip nozzle. as specified per plan.	REFER TO BID SCHEDULE
SSTRP	Hunter Pro-Spray Series 6" Pop-up spray head body with Toro Precision series 4X30 Sidestrip nozzle. as specified per plan.	REFER TO BID SCHEDULE
1402	Hunter PROS-4P-XX, Hunter Pro-Spray Series 4" Pop-up spray head body with RainBird 1400 series 1402, .5 GPM pressure compensating flood type bubbler nozzle. One unit per vine plant at Green Screen buffers.	REFER TO BID SCHEDULE
BZ	Hunter PROS-SR-XX, Hunter Pro-Spray series shrub riser spray nozzle adapter with RainBird 1400 series 1404, 1 GPM Flood type, pressure compensating bubbler nozzle. 1 Bubbler per designated tree/palm. Refer to plan for tree & palm locations. Connect bubbler units to Class 200 PVC 1-1/4" Bubbler Zone (BZ) lateral line.	REFER TO BID SCHEDULE
TBD	To be determined by contractor prior to submitting bid(s).	
C2-14	System # - Designated Valve Number.	
1.2"	Valve size	
20 GPM	Estimated Flow demand	
SPRAY	Hydrant Primary Application	
FW 1.50"	Estimated Application Rate	
32	Sleeve/casing designated number	
6" 75'	Sleeve/casing specified size/diameter	
	Sleeve/casing estimated length	

Spray Hydrant Nozzle Selection/Specification Note:  
The Toro Precision series spray nozzles with male threads for Hunter or RainBird spray hydrants has been specified due to the lower flow gallonage and better dirty water clogging resistance that is provided by the nozzles series. Unapproved spray hydrant manufacturer & series substitution will be rejected. All rejected units shall be removed and replaced with specified or approved units at the violating installer's/provider's expense.

FOREST LAKES BLVD.

WOOD SHIRE LANE

FOREST LAKES BLVD.

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Landscape Architect, NLA 0001516

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FOREST LAKES MSTU  
BOND PROJECT F-58  
COLLIER COUNTY, FLORIDA  
PREPARED FOR: COLLIER COUNTY D.O.T.

JOB #: 034-09

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SCALE: NTS

IRRIGATION PLAN KEY MAP

SHEET NUMBER:  
**IR-1**

Date: 11-02-11  
Revision Date: 11-23-11, 12-13-11, 13-11, 04-05-12  
Revision Date: 07-15-12 (Phase 2: 1899 bid alternate)  
Revision Date: 04-02-2012 (Rev. 2: Revised bid alternate)

IRRIGATION PHASES BASE & ALTERNATE BIDS LIST

PHASE 2 BASE BID - FOREST LAKES BOULEVARD/TURTLE LAKE GOLF ROW

- EXISTING IRRIGATION SYSTEMS REPAIR(S) AND MODIFICATION(S) NECESSARY DUE TO NEW SIDEWALK CONSTRUCTION; PROVIDE REPAIR(S) AND MODIFICATIONS TO EXISTING IRRIGATION SYSTEMS AFFECTED BY THE NEW SIDEWALK CONSTRUCTION ALONG FOREST LAKES BOULEVARD RIGHT OF WAY. REFER TO THE 250± SCHEMATIC SHOWN ON SHEET IR-3 FOR CONCEPT REFERENCE. IT SHALL BE THE IRRIGATION CONTRACTOR'S RESPONSIBILITY TO REVIEW EACH SITE AND PROVIDE REPAIRS/MODIFICATIONS THAT ARE REPRESENTATIVE OF THE SCHEMATIC GRAPHIC CONCEPT PRESENTED ON SHEET IR-3.

PHASE 2 BID ALTERNATE 1 - FOREST LAKES BOULEVARD/TURTLE LAKE GOLF ROW

- IRRIGATION POINT OF CONNECTION TO PHASE 1A EXISTING SYSTEM: 4" CLASS 200 PVC IRRIGATION SERVICE LINE, 30"± DEPTH; 4" CLASS 150 SDR 11 EXTRAMOLECULAR STRENGTH HDPE CASING TO BE USED AS IRRIGATION SERVICE LINE UNDER PAVED SURFACES; 4" HDPE TO PVC MECHANICAL JOINT COUPLINGS WITH TRANSITIONAL GASKETS; WATERMAN AA-6, 2" PRESSURE RELIEF VALVES; WATERMAN AV-150, 1.5" AIR VACUUM RELIEF VALVES; IRRIGATION MAIN/SERVICE LINE PRESSURE CHECK POINTS; 4" IRRIGATION SERVICE LINE ISOLATION GATE VALVES. REFER TO CONSTRUCTION AND BID DOCUMENTS FOR CORRESPONDING INFORMATION.

PHASE 2 BID ALTERNATE 2 - WOODSHIRE LANE ENTRY AREAS

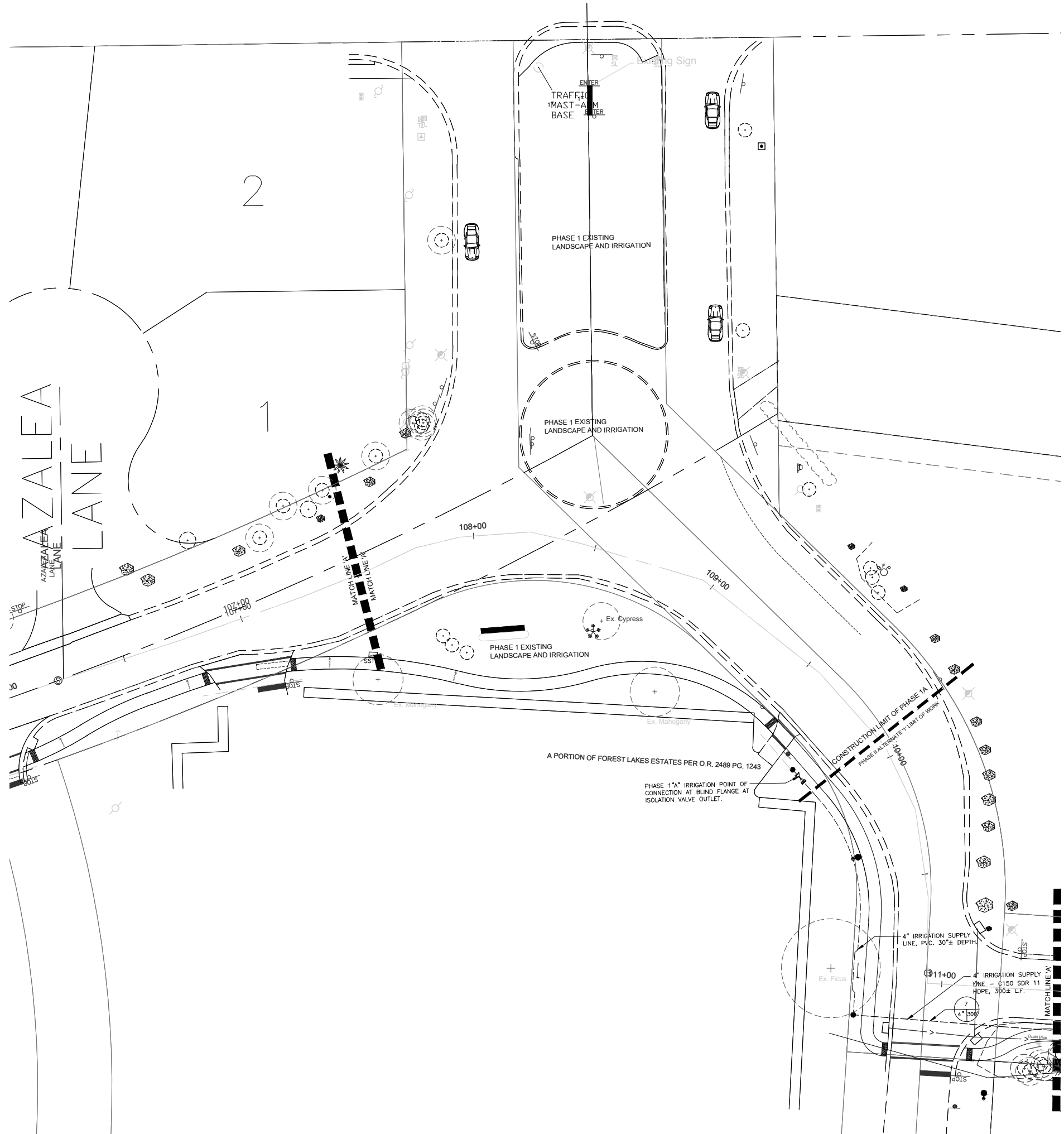
- IRRIGATION POINT OF CONNECTION OF 4" SERVICE LINE TO 3" HYDROMETER, PROVIDE MJ REDUCING FITTING; BERMAID 3" HYDROMETER AS SPECIFIED; ELECTRIC SERVICE TO CONTROLLER AS SPECIFIED; HUNTER ACC-990P, ACC 99 STATIONS DECODER CONTROLLER WITH HUNTER SOLAR SYNC WEATHER SENSOR; HUNTER ICD-400, 6 STATION DECODER; HUNTER ICD-400, 4 STATION DECODER; PAGE 12-2 MAXIWIRE, 12 GAUGE CONTROL WIRE FOR TWO-WIRE TECHNOLOGY DECODER CONTROL SYSTEMS; DIRECTIONAL BORE 19, 6" BORE; DIRECTIONAL BORES 20 & 21, 4" BORES; BORE 22, 3" BORE; BORE 23, 2" BORE; BORE 24, 3" BORE TO BE USED AS A 3" MAIN AT PAVED SURFACE CROSSING; 3" HDPE TO PVC MECHANICAL JOINT COUPLINGS WITH TRANSITION GASKETS; 3" CLASS 200 PVC MAIN LINE AT POINTS OF CONNECTION SHOWN PER PLAN; 4"x3"x3" MJ TEE AT EAST SIDE OF ROW POC; 2" IRRIGATION SUBMAIN ISOLATION VALVE; 2" CLASS 200 PVC IRRIGATION SUBMAIN; IRRIGATION MAIN/SUBMAIN PRESSURE CHECK POINT; HUNTER ICV SERIES 1" ZONE CONTROL VALVE AS SPECIFIED PER PLAN & BID DOCUMENTS; HUNTER PROS-12-R, PRO-SPRAY SERIES 12" HIGH POP-UP SPRAY HYDRANT WITH TORO PRECISION SERIES SPRAY NOZZLES; HUNTER PROS-6-R, PRO-SPRAY SERIES 6" HIGH POP-UP SPRAY HYDRANT WITH TORO PRECISION SERIES SPRAY NOZZLES; HUNTER PROS-SR, PRO-SPRAY SERIES SHRUB RISER SPRAY NOZZLE ADAPTER WITH RAINBIRD 1404 PRESSURE COMPENSATING UMBRELLA TYPE BUBBLER NOZZLE FOR TREES DESIGNATED PER THIS ALTERNATE BID; CLASS 200 PVC LATERAL LINE PIPING FOR ZONE C2-8 FROM ZONE CONTROL VALVE TO TREES/PALMS DESIGNATED FOR THIS ALTERNATE BID, PROVIDE TEES WITH THREADED PLUGS AT OUTLETS DESIGNATED FOR TREES/PALMS TO BE INSTALLED AT OTHER ALTERNATE BIDS SERVICED BY THE INSTALLED PIPING SECTION; EXISTING IRRIGATION SYSTEM ADAPTER WITH RAINBIRD 1404 PRESSURE COMPENSATING UMBRELLA TYPE BUBBLER NOZZLE FOR TREES DESIGNATED PER THIS ALTERNATE BID; CLASS 200 PVC LATERAL LINE PIPING FOR ZONE C2-8 FROM ZONE CONTROL VALVE TO TREES/PALMS DESIGNATED FOR THIS ALTERNATE BID, PROVIDE TEES WITH THREADED PLUGS AT OUTLETS DESIGNATED FOR TREES/PALMS TO BE INSTALLED AT OTHER ALTERNATE BIDS SERVICED BY THE INSTALLED PIPING SECTION; PROPOSED ZONES C2-1, C2-2 & C2-8 ELEMENTS SHOWN/DESIGNATED; EXISTING IRRIGATION SYSTEM ZONE CONTROL VALVES & HYDRANTS REMOVAL AND EXISTING MAIN LINE CAPPING AT THE AREAS AFFECTED BY THE PROPOSED ALTERNATE BID WORK. REFER TO CONSTRUCTION AND BID DOCUMENTS FOR CORRESPONDING INFORMATION.

PHASE 2 BID ALTERNATE 3 - WOODSHIRE LANE RIGHT OF WAY AREAS

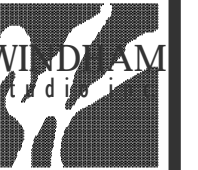
- HUNTER ICD-400, 4 STATION DECODER; PAGE 12-2 MAXIWIRE, 12 GAUGE CONTROL WIRE FOR TWO-WIRE TECHNOLOGY DECODER CONTROL SYSTEMS; SLEEVES 29 & 32, 4" SCH 40 PVC; 3" IRRIGATION MAIN ISOLATION VALVE; 3" CLASS 200 PVC IRRIGATION MAIN; HUNTER ICV SERIES 1" ZONE CONTROL VALVE AS SPECIFIED PER PLAN & BID DOCUMENTS; HUNTER I-20-6P-ADJ, I-20 SERIES 6" ROTOR HEADS; HUNTER PROS-12-R, PRO-SPRAY SERIES 12" HIGH POP-UP SPRAY HYDRANT WITH TORO PRECISION SERIES SPRAY NOZZLES; HUNTER PROS-6-R, PRO-SPRAY SERIES 6" HIGH POP-UP SPRAY HYDRANT WITH TORO PRECISION SERIES SPRAY NOZZLES; ADAPTER WITH RAINBIRD 1404 PRESSURE COMPENSATING UMBRELLA TYPE BUBBLER NOZZLE FOR TREES DESIGNATED PER THIS ALTERNATE BID; PROPOSED ZONES C2-3, C2-4, C2-5, C2-6, C2-7, C2-8 (SECOND PART OF ZONE), C2-9, C2-10, C2-11 & C2-12; IRRIGATION SUBMAIN; IRRIGATION MAIN/SUBMAIN PRESSURE CHECK POINT; HUNTER PROS-SR, PRO-SPRAY SERIES SHRUB RISER SPRAY NOZZLE ADAPTER WITH TORO PRECISION SERIES SPRAY NOZZLES; HUNTER PROS-6-R, PRO-SPRAY SERIES 6" HIGH POP-UP SPRAY HYDRANT WITH TORO PRECISION SERIES SPRAY NOZZLES; HUNTER PROS-SR, PRO-SPRAY SERIES SHRUB RISER SPRAY NOZZLE ADAPTER WITH TORO PRECISION SERIES SPRAY NOZZLES; HUNTER PROS-6-R, PRO-SPRAY SERIES 6" HIGH POP-UP SPRAY HYDRANT WITH TORO PRECISION SERIES SPRAY NOZZLES; EXISTING IRRIGATION SYSTEM ZONE CONTROL VALVES & HYDRANTS REMOVAL AND EXISTING MAIN LINE CAPPING AT THE AREAS AFFECTED BY THE PROPOSED ALTERNATE BID WORK. REFER TO CONSTRUCTION AND BID DOCUMENTS FOR CORRESPONDING INFORMATION.

PHASE 3 BID ALTERNATE 5 - WEST ENTRY ROW PROPOSED TURN LANE & SIDEWALK

- PROVIDE PROPOSED POINT OF CONNECTION AT EXISTING ZONE CONTROL VALVES MANIFOLD; CONNECT PROPOSED ZONE CONTROL VALVE WIRE (AWG 14 GAUGE) TO EXISTING CONTROLLER; HUNTER ICV SERIES 1.5" ZONE CONTROL VALVE AS SPECIFIED PER PLAN & BID DOCUMENTS; PROVIDE PROPOSED DIRECTIONAL BORES AND SLEEVES: 5B - 2" SCH 40 PVC SLEEVE, 5C - 2" HDPE DIRECTIONAL BORE, 5D - 3" HDPE DIRECTIONAL BORE, 5E - 3" HDPE DIRECTIONAL BORE, 5F - 2" SCH 40 PVC SLEEVE; REMOVAL/RELOCATE 12± EXISTING 6" POP-UP SPRAY HEADS TO DESIGNATED LOCATIONS (REFER TO PLAN); HUNTER PROS-06-R, PRO-SPRAY SERIES 6" POP-UP SPRAY HYDRANT WITH TORO PRECISION SERIES SPRAY NOZZLES; HUNTER PROS-SR, PRO-SPRAY SERIES SHRUB RISER SPRAY NOZZLE ADAPTER WITH TORO PRECISION SERIES SPRAY NOZZLE MOUNTED ON 60"x1/2" SCH 80 PVC RISER; MODIFICATIONS TO EXISTING SYSTEM TO INCORPORATE PROPOSED SYSTEM ELEMENTS; RESTORE EXISTING LANDSCAPE DISTURBED BY PROPOSED IRRIGATION SYSTEM IMPROVEMENTS & ADDITIONS. REFER TO CONSTRUCTION AND BID DOCUMENTS FOR CORRESPONDING INFORMATION.



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SCALE: 1" = 200'

IRRIGATION PLAN 1

Date: 11-02-11  
Revision Date: 11-24-11, 12-13-11, 1-31-12, 04-05-12  
Revision Date: 07-18-12 (Phase 2, 18794 bid alternate)  
Revision Date: 04-02-2013 (Rev. 2, Revised Bid alternate)

SHEET NUMBER:  
IR-2

### GENERAL IRRIGATION NOTES

- PIPING AND OTHER IRRIGATION SYSTEM ELEMENTS ARE SHOWN ON PAVED OR OTHER NON-LANDSCAPE DESIGNATED AREAS FOR GRAPHIC CLARITY ONLY. ACTUAL LOCATION SHALL BE WITHIN LANDSCAPE DESIGNATED AREA OR AS DIRECTED BY LANDSCAPE ARCHITECT.
- THE IRRIGATION SYSTEM'S WATER SOURCE IS A PROPOSED 2" EFFLUENT WATER METER THAT IS CONNECTED TO THE CITY OF NAPLES EFFLUENT WATER SYSTEM SERVICE, AT THE PROJECT'S PHASE I AREA. EFFLUENT WATER WILL BE CONDUCTED THROUGH A 4" SERVICE LINE FROM THE PROJECT'S PHASE I AREA TO THE PROJECT'S PHASE II AREA. A 3" HYDROMETER VALVE WITH AN ELECTRIC SOLENOID AND PRESSURE REDUCING PILOT SHALL BE INSTALLED AND USED AS A FLOW MANAGEMENT/RECORDING DEVICE FOR THE PHASE II SYSTEM. THE PRESSURE REDUCING PILOT SHALL BE ADJUSTED DOWN TO 60± PSI.
- PROVIDE CLASS 150 SDR 11 HDPE SECTIONS AT ALL MAIN LINE CROSSINGS TO BE USED AS AN ENTIRE MAIN LINE SECTION FOR THE ENTIRE CROSSING. ALL PVC TO SDR11 HDPE CONNECTIONS SHALL BE DONE WITH LEAK-PROOF MECHANICAL JOINT COUPLINGS WITH TRANSITIONAL GASKETS. ALL CONNECTIONS OF THIS NATURE SHALL BE MADE IN ACCORDANCE TO THE CORRESPONDING MANUFACTURER AND AWWA CURRENT SPECIFICATIONS.
- PROVIDE CLASS 150 SDR 11 HDPE CASINGS AS SIZED PER PLAN AT ALL EXISTING PAVED SURFACE CROSSINGS WHERE ELECTRICAL SERVICE AND ZONE CONTROL WIRES, AS WELL AS LATERAL LINE PIPING ARE TO OCCUR, WHERE POSSIBLE AND PRACTICAL. DIRECTIONAL BORE CASINGS MAY BE PULLED TOGETHER.
- PROVIDE SCH 40 PVC CASINGS AS SIZED PER PLAN AT ALL SIDEWALKS AND OR PAVED SURFACE CROSSINGS WHERE ELECTRICAL SERVICE AND ZONE CONTROL WIRES, AS WELL AS LATERAL LINE PIPING ARE TO OCCUR. AT LOCATIONS WHERE NEW SIDEWALK IS SCHEDULED TO OCCUR.
- PROVIDE CASING LOCATING BALLS AT EACH CASING END. IRRIGATION CASINGS SHALL EXTEND 7' BEYOND THE PAVEMENT LIMITS AT EDGE OF PAVEMENT WITH NO CURBING; 4' BEYOND THE EDGE OF PAVEMENT AT SIDEWALKS AND CROSSINGS WITH CURBING. SEAL ALL OPEN CASING OPENINGS WITH SEALING FOAM.

### GENERAL IRRIGATION NOTES

- IRRIGATION CONTRACTOR, OWNER, AND LANDSCAPE ARCHITECT SHALL FIELD DETERMINE THE FINAL LOCATION FOR THE IRRIGATION CONTROLLER. IRRIGATION CONTRACTOR SHALL PROVIDE DEDICATED POWER SUITABLE FOR CONTROLLER OPERATION, IN CONDUIT TO CONTROLLER. INCLUDE ALL HARDWARE AND LABOR NECESSARY.
- PROVIDE: (1) BUBBLER PER PROPOSED TREE/PALM. THE BUBBLER SHALL BE PRESSURE COMPENSATING FLOOD TYPE, 5 GPM BUBBLER. THE BUBBLER SHALL BE PLACED AT THE EDGE OF THE ROOTBALL, NOT NEXT TO THE TRUNK. REFER TO THE BUBBLER REFERENCE CHART FOR BUBBLER ADJUSTMENTS.
- THE PROPOSED LANDSCAPE LAYOUT SHOWN IS SHOWN FOR GRAPHIC REFERENCE OF THE PROPOSED LANDSCAPE LAYOUT. LANDSCAPE LAYOUT CHANGES BY OTHERS MAY TAKE PLACE AT ANY TIME. THE IRRIGATION CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING AND COORDINATING WITH THE LANDSCAPE ARCHITECT AND LANDSCAPE CONTRACTOR AT ALL TIMES FOR POTENTIAL LANDSCAPE LAYOUT CHANGES. THE IRRIGATION CONTRACTOR SHALL BE RESPONSIBLE FOR MAKING FIELD ADJUSTMENTS AS NEEDED.
- DUE TO THE DISTANCE FROM THE IRRIGATION WATER SOURCE LOCATION TO THE WOODSHIRE LANE SYSTEM ZONES THE ZONES HAVE BEEN DESIGN TO HAVE A LOW FLOW DEMAND IN ORDER TO REDUCE FRICTION LOSSES AND MINIMIZE THE PRESSURE SURGE (WATER HAMMER) POTENTIAL.
- ALTHOUGH THE SPRAY TYPE HYDRANTS MANUFACTURER SPECIFIED IS HUNTER, THE SPRAY NOZZLES SPECIFIED TO BE USED ARE THE TORO PRECISION SERIES FOR HUNTER/RAINBIRD HYDRANT THREADS.
- ALL DIRECTIONAL CHANGE FITTINGS AT THE 4" SUPPLY LINE AND 3" IRRIGATION MAIN SHALL BE DUCTILE IRON PIPE FITTINGS WITH FLANGED CONNECTIONS. ALL POINTS SUBJECT TO PRESSURE SURGE IMPACT SHALL BE THRUST BLOCKED.
- REFER TO THE CORRESPONDING PLAN SHEETS LABELING TO DIFFER BETWEEN THE PROPOSED BASE BID ITEMS AND THE PROPOSED ALTERNATE BID ITEMS FOR THE WOODSHIRE LANE SYSTEM SUBJECT PHASE SUBJECT TO BIDDING PER THIS SET OF CONSTRUCTION DOCUMENTS.
- THE LANDSCAPE LAYOUT SHOWN IS FOR GRAPHIC REFERENCE OF A PROPOSED LANDSCAPE LAYOUT THAT IS SUBJECT TO DESIGN/LAYOUT CHANGES. THE IRRIGATION CONTRACTOR SHALL COORDINATE AT ALL TIMES WITH THE LANDSCAPE ARCHITECT AND LANDSCAPE CONTRACTOR TO REVIEW AND COORDINATE SO THAT THE PROPOSED IRRIGATION DESIGN IS SUITABLE FOR THE FINAL LANDSCAPE DESIGN LAYOUT. PROVIDE IRRIGATION LAYOUT ADJUSTMENTS AS NEEDED IN ORDER TO COORDINATE WITH THE FINAL LANDSCAPE DESIGN.

### REFERENCE IRRIGATION LEGEND

SYMBOL	DESCRIPTION
WM	IRRIGATION WATER SOURCE: PROPOSED CITY OF NAPLES SERVICE 2" EFFLUENT WATER METER. FLOW CAPACITY: 125 GPM. REQUIRED MINIMUM PRESSURE: 60± PSI.
3"	BERMAD 3" HYDROMETER WITH ELECTRIC SOLENOID, PRESSURE REDUCING VALVE, FLANGED CONNECTIONS.
CONTR. C1	ELECTRIC SERVICE WIRE IN 1.25" SCH 80 PVC CONDUIT FROM POWER POLE TO CONTROLLER C2 LOCATION.
CONTR. C2	HUNTER ACC 18 STATIONS IRRIGATION CONTROLLER FOR CONVENTIONAL MULTI-WIRE SYSTEMS, WITH RAIN SENSOR. REFER TO PLAN AND SPECIFICATIONS LEGEND FOR SPECIFIC CONTROLLER INFORMATION. EXISTING PHASE I ELEMENT, NOT IN THIS CONTRACT.
CONTR. C3	HUNTER ACC 99 STATIONS IRRIGATION CONTROLLER FOR TWO-WIRE DECODER SYSTEMS, WITH RAIN SENSOR. REFER TO PLAN AND SPECIFICATIONS LEGEND FOR SPECIFIC CONTROLLER INFORMATION.
4"	HUNTER ACC SERIES CONTROL SYSTEM 2, 4 & 6 STATIONS DECODER FOR TWO-WIRE CONTROL SYSTEM TECHNOLOGY.
4"	IRRIGATION MAIN LINE PRESSURE CHECK POINT. REFER TO DETAIL.
4"	PROPOSED CASING/SLEEVES: AS SIZED PER PLAN.
4"	CLASS 200 PVC IRRIGATION SUPPLY LINE W/ HARCO DIP FITTINGS, P, PURPLE 522C

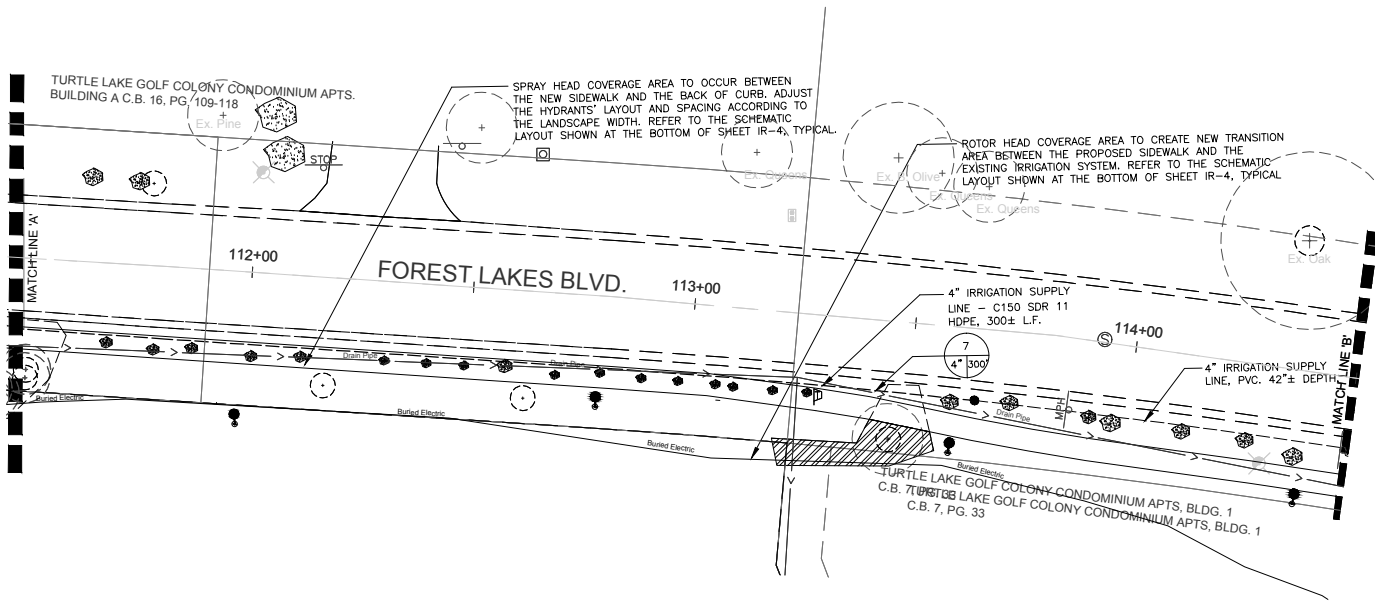
### REFERENCE IRRIGATION LEGEND

SYMBOL	DESCRIPTION
3" OR 2" PVC	3" OR 2" CLASS 200 PVC IRRIGATION MAIN OR SUBMAIN, PANTOME PURPLE 522C
HOPE	4" OR 3" CLASS 150 SDR 11 HDPE CASING TO BE USED AS SUPPLY LINE OR MAIN AT PAVED SURFACE CROSSINGS. USE MECHANICAL JOINT COUPLINGS WITH TRANSITIONAL GASKETS FOR CONNECTING TO PVC. REFER TO PLAN FOR SIZES.
PVC HOPE	4" OR 3" MECHANICAL JOINT COUPLING WITH TRANSITIONAL GASKETS FOR CONNECTING PVC MAIN LINE SECTIONS TO HDPE MAIN LINE SECTIONS. REFER TO PLAN FOR SIZES.
HOPE	CLASS 200 PVC PIPING, LAVENDER COLOR, PIPE SIZES: 1" = A; 1.5" = B; 2" = C; 3" = D; 4" = E
HOPE	3" MAIN LINE ISOLATION GATE VALVE, FLANGED CONNECTIONS.
HOPE	PROPOSED ZONE CONTROL VALVE WITH ISOLATION VALVE & PRES. REGULATOR.
HOPE	IRRIGATION MAIN LINE BLOW-OFF ASSEMBLY. SEE DETAIL.
HOPE	IRRIGATION MAIN LINE 2" AIR/VACUUM RELEASE VALVE. REFER TO ELEMENT SPECIFICATIONS LEGEND FOR MANUFACTURER AND MODEL INFORMATION.
HOPE	IRRIGATION MAIN LINE 1.5" PRESSURE RELIEF VALVE. REFER TO ELEMENT SPECIFICATIONS LEGEND FOR MANUFACTURER AND MODEL INFORMATION.

### REFERENCE IRRIGATION LEGEND

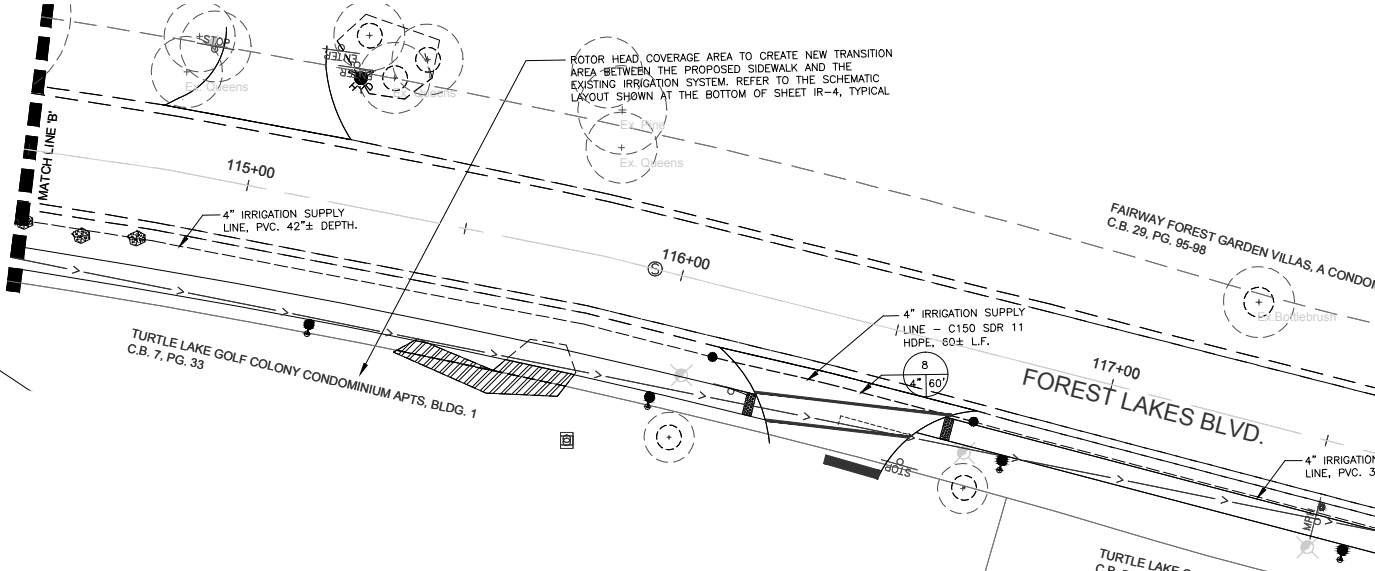
SYMBOL	DESCRIPTION
HOPE	12" HIGH POP-UP ROTARY GEAR DRIVE HYDRANT WITH NOZZLE AS SPECIFIED
HOPE	6" POP-UP ROTARY GEAR DRIVE HYDRANT WITH NOZZLE AS SPECIFIED
HOPE	12" HIGH POP-UP SPRAY HYDRANT WITH TORO PRECISION SERIES NOZZLE
HOPE	TORO PRECISION SERIES SIDESTRIP NOZZLE ON 12" POP-UP SPRAY HYDRANT
HOPE	TORO PRECISION SERIES SIDESTRIP NOZZLE ON 12" POP-UP SPRAY HYDRANT
HOPE	TORO PRECISION SERIES SIDESTRIP NOZZLE W/ADAPTER ON 60" PVC RISER
HOPE	TORO PRECISION SERIES SPRAY NOZZLE W/ADAPTER ON 60" PVC RISER
HOPE	.5 GPM BUBBLER NOZZLE ON 4" POP-UP BODY, ONE UNIT PER YINE.
HOPE	BUBBLERS TO PALMS / TREES, BZ = 1-1/4" LINE. SEE TREE LEGEND.
HOPE	CONTROLLER VALVE - VALVE NUMBER
HOPE	ZONE CONTROL VALVE SIZE
HOPE	ESTIMATED FLOW DEMAND
HOPE	HYDRANT TYPE APPLICATION
HOPE	ESTIMATED APPLICATION RATE, IN INCHES PER HOUR.
HOPE	BASE BID - BASE BID ZONE ITEMS (ZONE CONTROL VALVE, HYDRANTS AND PIPING LABELED).
HOPE	ALT. BID - ALTERNATE BID ZONE ITEMS (ZONE CONTROL VALVE, HYDRANTS AND PIPING LABEL)

### GENERAL NOTES AND REFERENCE LEGEND



### FOREST LAKES BOULEVARD STA 107+50 - STA 114+50

SCALE: 1" = 20.0'



### FOREST LAKES BOULEVARD STA 114+50 - STA 120+50

SCALE: 1" = 20.0'

### IRRIGATION PHASES BASE & ALTERNATE BIDS LIST

#### PHASE 2 BASE BID - FOREST LAKES BOULEVARD/TURTLE LAKE GOLF ROW

- EXISTING IRRIGATION SYSTEMS REPAIR(S) AND MODIFICATION(S) NECESSARY DUE TO NEW SIDEWALK CONSTRUCTION: PROVIDE REPAIR(S) AND MODIFICATIONS TO EXISTING IRRIGATION SYSTEMS AFFECTED BY THE NEW SIDEWALK CONSTRUCTION ALONG FOREST LAKES BOULEVARD RIGHT OF WAY. REFER TO THE 250' SCHEMATIC SHOWN ON SHEET IR-3 FOR CONCEPT REFERENCE. IT SHALL BE THE IRRIGATION CONTRACTOR'S RESPONSIBILITY TO REVIEW EACH SITE AND PROVIDE REPAIRS/MODIFICATIONS THAT ARE REPRESENTATIVE OF THE SCHEMATIC GRAPHIC CONCEPT PRESENTED ON SHEET IR-3.

#### PHASE 2 BID ALTERNATE 1 - FOREST LAKES BOULEVARD/TURTLE LAKE GOLF ROW

- IRRIGATION POINT OF CONNECTION TO PHASE 1A EXISTING SYSTEM; 4" CLASS 200 PVC IRRIGATION SERVICE LINE, 30"± DEPTH; 4" CLASS 150 SDR 11 EXTRAMOLECULAR STRENGTH HDPE CASING TO BE USED AS IRRIGATION SERVICE LINE UNDER PAVED SURFACES; 4" HOPE TO PVC MECHANICAL JOINT COUPLINGS WITH TRANSITIONAL GASKETS; WATERMAN AA-6, 2" PRESSURE RELIEF VALVES; WATERMAN AV-150, 1.5" AIR VACUUM RELIEF VALVES; IRRIGATION MAIN/SERVICE LINE PRESSURE CHECK POINTS; 4" IRRIGATION SERVICE LINE ISOLATION GATE VALVES. REFER TO CONSTRUCTION AND BID DOCUMENTS FOR CORRESPONDING INFORMATION.

#### PHASE 2 BID ALTERNATE 2 - WOODSHIRE LANE ENTRY AREAS

- IRRIGATION POINT OF CONNECTION OF 4" SERVICE LINE TO 3" HYDROMETER, PROVIDE MJ REDUCING FITTING; BERMAD 3" HYDROMETER AS SPECIFIED; ELECTRIC SERVICE TO CONTROLLER AS SPECIFIED; HUNTER ACC-990P, ACC 99 STATIONS DECODER CONTROLLER WITH HUNTER SOLAR SYNC WEATHER SENSOR; HUNTER ICD-600, 6 STATION DECODER; HUNTER ICD-400, 4 STATION DECODER; PAGE 12-2 MAXIWIRE, 12 GAUGE CONTROL WIRE FOR TWO-WIRE TECHNOLOGY DECODER CONTROL SYSTEMS; DIRECTIONAL BORE 19, 6" BORE; DIRECTIONAL BORES 20 & 21, 4" BORES; BORE 22, 3" BORE; BORE 23, 2" BORE; BORE 24, 3" BORE TO BE USED AS A 3" MAIN AT PAVED SURFACE CROSSINGS; 3" HOPE TO PVC MECHANICAL JOINT COUPLINGS WITH TRANSITIONAL GASKETS; 3" CLASS 200 PVC MAIN LINE AT POINTS OF CONNECTION SHOWN PER PLAN; 4"x3"x3" MJ TEE AT EAST SIDE OF ROW POC; 2" IRRIGATION SUBMAIN ISOLATION VALVE; 2" CLASS 200 PVC IRRIGATION SUBMAIN; IRRIGATION MAIN/SUBMAIN PRESSURE CHECK POINT; HUNTER ICV SERIES 1" ZONE CONTROL VALVE AS SPECIFIED PER PLAN & BID DOCUMENTS; HUNTER PROS-12-R, PRO-SPRAY SERIES 12" HIGH POP-UP SPRAY HYDRANT WITH TORO PRECISION SERIES SPRAY NOZZLES; HUNTER PROS-6-R, PRO-SPRAY SERIES 6" HIGH POP-UP SPRAY HYDRANT WITH TORO PRECISION SERIES SPRAY NOZZLES; HUNTER PROS-SR, PRO-SPRAY SERIES SHRUB RISER SPRAY NOZZLE ADAPTER WITH RAINBIRD 1404 PRESSURE COMPENSATING UMBRELLA TYPE BUBBLER NOZZLE FOR TREES DESIGNATED PER THIS ALTERNATE BID; CLASS 200 PVC LATERAL LINE PIPING FOR ZONE C2-8 FROM ZONE CONTROL VALVE TO TREES/PALMS DESIGNATED FOR THIS ALTERNATE BID, PROVIDE TEES WITH THREADED PLUGS AT OUTLETS DESIGNATED FOR TREES/PALMS TO BE INSTALLED AT OTHER ALTERNATE BIDS SERVICED BY THE INSTALLED PIPING SECTION; EXISTING IRRIGATION SYSTEM ADAPTER WITH RAINBIRD 1404 PRESSURE COMPENSATING UMBRELLA TYPE BUBBLER NOZZLE FOR TREES DESIGNATED PER THIS ALTERNATE BID; CLASS 200 PVC LATERAL LINE PIPING FOR ZONE C2-8 FROM ZONE CONTROL VALVE TO TREES/PALMS DESIGNATED FOR THIS ALTERNATE BID, PROVIDE TEES WITH THREADED PLUGS AT OUTLETS DESIGNATED FOR TREES/PALMS TO BE INSTALLED AT OTHER ALTERNATE BIDS SERVICED BY THE INSTALLED PIPING SECTION; PROPOSED ZONES C2-1, C2-2 & C2-8 ELEMENTS SHOWN/DESIGNATED; EXISTING IRRIGATION SYSTEM ZONE CONTROL VALVES & HYDRANTS REMOVAL AND EXISTING MAIN LINE CAPPING AT THE AREAS AFFECTED BY THE PROPOSED ALTERNATE BID WORK. REFER TO CONSTRUCTION AND BID DOCUMENTS FOR CORRESPONDING INFORMATION.

#### PHASE 2 BID ALTERNATE 3 - WOODSHIRE LANE RIGHT OF WAY AREAS

- HUNTER ICD-400, 4 STATION DECODER; PAGE 12-2 MAXIWIRE, 12 GAUGE CONTROL WIRE FOR TWO-WIRE TECHNOLOGY DECODER CONTROL SYSTEMS; SLEEVES 29 & 32, 4" SCH 40 PVC; 3" IRRIGATION MAIN ISOLATION VALVE; 3" CLASS 200 PVC IRRIGATION MAIN; HUNTER ICV SERIES 1" ZONE CONTROL VALVE AS SPECIFIED PER PLAN & BID DOCUMENTS; HUNTER I-20-6P-ADJ, I-20 SERIES 6" ROTOR HEADS; HUNTER PROS-12-R, PRO-SPRAY SERIES 12" HIGH POP-UP SPRAY HYDRANT WITH TORO PRECISION SERIES SPRAY NOZZLES; HUNTER PROS-6-R, PRO-SPRAY SERIES 6" HIGH POP-UP SPRAY HYDRANT WITH TORO PRECISION SERIES SPRAY NOZZLES; ADAPTER WITH RAINBIRD 1404 PRESSURE COMPENSATING UMBRELLA TYPE BUBBLER NOZZLE FOR TREES DESIGNATED PER THIS ALTERNATE BID; PROPOSED ZONES C2-3, C2-4, C2-5, C2-6, C2-7, C2-8 (SECOND PART OF ZONE), C2-9, C2-10, C2-11 & C2-12; IRRIGATION SUBMAIN; IRRIGATION MAIN/SUBMAIN PRESSURE CHECK POINT; HUNTER PROS-SR, PRO-SPRAY SERIES SHRUB RISER SPRAY NOZZLE ADAPTER WITH TORO PRECISION SERIES SPRAY NOZZLES; HUNTER PROS-6-R, PRO-SPRAY SERIES 6" HIGH POP-UP SPRAY HYDRANT WITH TORO PRECISION SERIES SPRAY NOZZLES; SERIES 6" HIGH POP-UP SPRAY HYDRANT WITH TORO PRECISION SERIES SPRAY NOZZLES; EXISTING IRRIGATION SYSTEM ZONE CONTROL VALVES & HYDRANTS REMOVAL AND EXISTING MAIN LINE CAPPING AT THE AREAS AFFECTED BY THE PROPOSED ALTERNATE BID WORK. REFER TO CONSTRUCTION AND BID DOCUMENTS FOR CORRESPONDING INFORMATION.

#### PHASE 3 BID ALTERNATE 5 - WEST ENTRY ROW PROPOSED TURN LANE & SIDEWALK

- PROVIDE PROPOSED POINT OF CONNECTION AT EXISTING ZONE CONTROL VALVES MANIFOLD; CONNECT PROPOSED ZONE CONTROL VALVE WIRE (AWG 14 GAUGE) TO EXISTING CONTROLLER; HUNTER ICV SERIES 1.5" ZONE CONTROL VALVE AS SPECIFIED PER PLAN & BID DOCUMENTS; PROVIDE PROPOSED DIRECTIONAL BORES AND SLEEVES: 58 - 2" SCH 40 PVC SLEEVE, 50 - 2" HDPE DIRECTIONAL BORE, 50 - 3" HDPE DIRECTIONAL BORE, 5E - 3" HDPE DIRECTIONAL BORE, 5F - 2" SCH 40 PVC SLEEVE; REMOVAL/RELOCATE 12x EXISTING 6" POP-UP SPRAY HEADS TO DESIGNATED LOCATIONS (REFER TO PLAN); HUNTER PROS-06-R, PRO-SPRAY SERIES 6" POP-UP SPRAY HYDRANT WITH TORO PRECISION SERIES SPRAY NOZZLES; HUNTER PROS-SR, PRO-SPRAY SERIES SHRUB RISER SPRAY NOZZLE ADAPTER WITH TORO PRECISION SERIES SPRAY NOZZLE MOUNTED ON 60"x1/2" SCH 80 PVC RISER; MODIFICATIONS TO EXISTING SYSTEM TO INCORPORATE PROPOSED SYSTEM ELEMENTS; RESTORE EXISTING LANDSCAPE DISTURBED BY PROPOSED IRRIGATION SYSTEM IMPROVEMENTS & ADDITIONS. REFER TO CONSTRUCTION AND BID DOCUMENTS FOR CORRESPONDING INFORMATION.

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**FOREST LAKES MSTU  
BOND PROJECT F-58**  
COLLIER COUNTY, FLORIDA  
PREPARED FOR: COLLIER COUNTY D.O.T.

JOB #: 034-09

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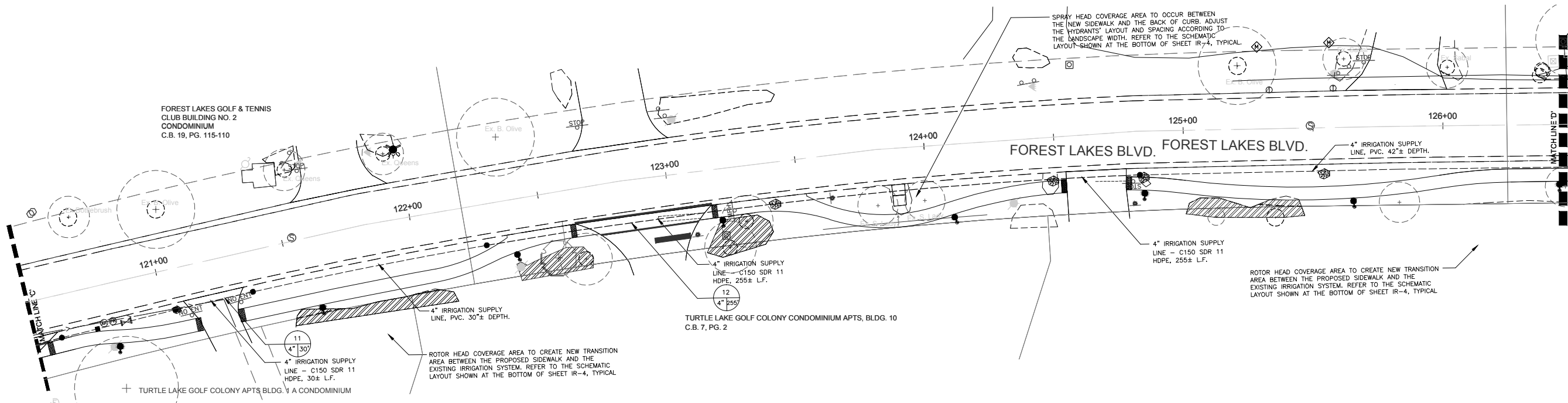
SCALE: 1" = 20.0'

IR-3

DATE: 11-02-11  
REVISION DATE: 11-24-11, 12-13-11, 13-12, 04-04-12  
REVISION DATE: 01-18-12 (Phase 2, 100% bid document)  
REVISION DATE: 04-02-2012 (Rev. 7, Revised bid document)

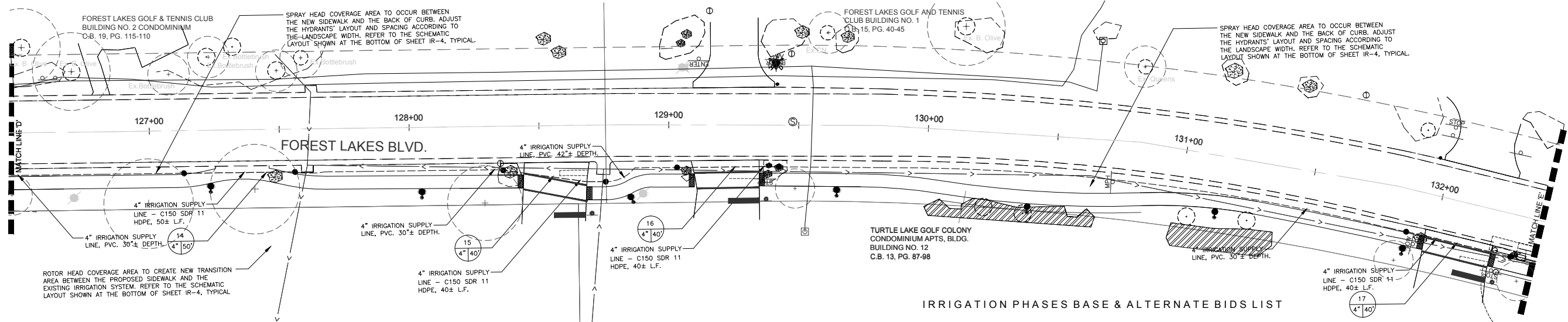
IRRIGATION PLAN 2

SHEET NUMBER:  
**IR-3**



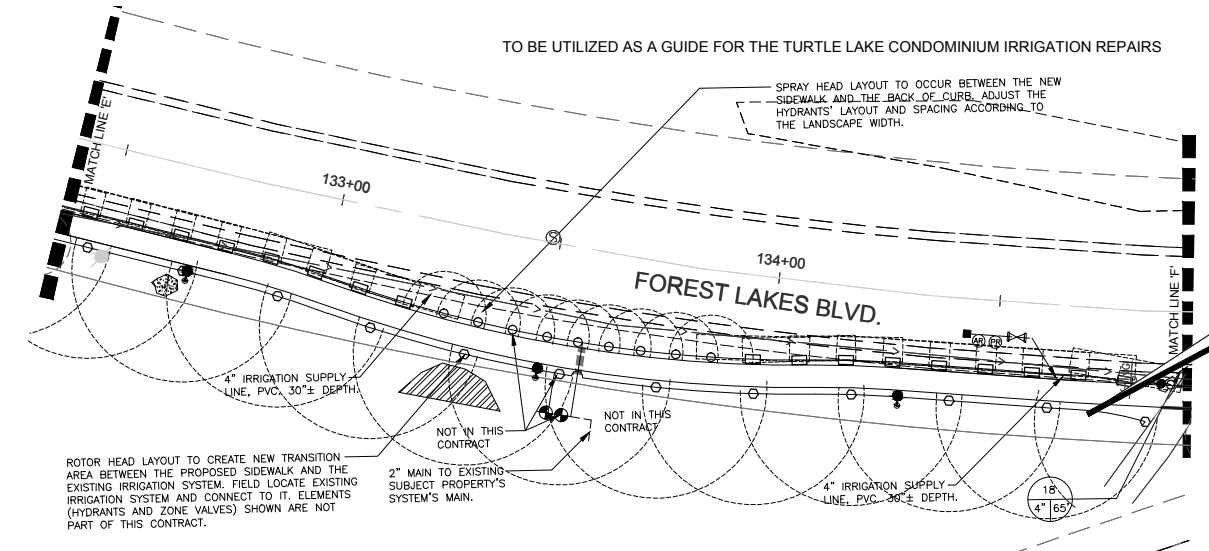
**FOREST LAKES BOULEVARD STA 120+50 - STA 126+00**

SCALE: 1" = 20.0'



**FOREST LAKES BOULEVARD STA 126+00 - STA 132+10**

SCALE: 1" = 20.0'



**FOREST LAKES BOULEVARD STA 132+10 - STA 135+81.90**

SCALE: 1" = 20.0' TYPICAL IRRIGATION REPAIR PLAN

**IRRIGATION PHASES BASE & ALTERNATE BIDS LIST**

- PHASE 2 BASE BID - FOREST LAKES BOULEVARD/TURTLE LAKE GOLF ROW**
- EXISTING IRRIGATION SYSTEMS REPAIR(S) AND MODIFICATION(S) NECESSARY DUE TO NEW SIDEWALK CONSTRUCTION; PROVIDE REPAIR(S) AND MODIFICATIONS TO EXISTING IRRIGATION SYSTEMS AFFECTED BY THE NEW SIDEWALK CONSTRUCTION ALONG FOREST LAKES BOULEVARD RIGHT OF WAY. REFER TO THE 250' SCHEMATIC SHOWN ON SHEET IR-3 FOR CONCEPT REFERENCE. IT SHALL BE THE IRRIGATION CONTRACTOR'S RESPONSIBILITY TO REVIEW EACH SITE AND PROVIDE REPAIRS/ MODIFICATIONS THAT ARE REPRESENTATIVE OF THE SCHEMATIC GRAPHIC CONCEPT PRESENTED ON SHEET IR-3.
- PHASE 2 BID ALTERNATE 1 - FOREST LAKES BOULEVARD/TURTLE LAKE GOLF ROW**
- IRRIGATION POINT OF CONNECTION TO PHASE 1A EXISTING SYSTEM; 4" CLASS 200 PVC IRRIGATION SERVICE LINE, 30"± DEPTH; 4" CLASS 150 SDR 11 EXTRAMOLECULAR STRENGTH HDPE CASING TO BE USED AS IRRIGATION SERVICE LINE UNDER PAVED SURFACES; 4" HDPE TO PVC MECHANICAL JOINT COUPLINGS WITH TRANSITIONAL GASKETS; WATERMAN AA-6, 2" PRESSURE RELIEF VALVES; WATERMAN AV-150, 1.5" AIR VACUUM RELIEF VALVES; IRRIGATION MAIN/SERVICE LINE PRESSURE CHECK POINTS; 4" IRRIGATION SERVICE LINE ISOLATION GATE VALVES. REFER TO CONSTRUCTION AND BID DOCUMENTS FOR CORRESPONDING INFORMATION.
- PHASE 2 BID ALTERNATE 2 - WOODSHIRE LANE ENTRY AREAS**
- IRRIGATION POINT OF CONNECTION OF 4" SERVICE LINE TO 3" HYDROMETER, PROVIDE MJ REDUCING FITTING; BERMAID 3" HYDROMETER AS SPECIFIED; ELECTRIC SERVICE TO CONTROLLER AS SPECIFIED; HUNTER ACC-99DP, ACC 99 STATIONS DECODER CONTROLLER WITH HUNTER SOLAR SYNC WEATHER SENSOR; HUNTER ICD-600, 6 STATION DECODER; HUNTER ICD-400, 4 STATION DECODER; PAIGE 12-2 MAXIWIRE, 12 GAUGE CONTROL WIRE FOR TWO-WIRE TECHNOLOGY DECODER CONTROL SYSTEMS; DIRECTIONAL BORE 19, 6" BORE; DIRECTIONAL BORES 20 & 21, 4" BORES; BORE 22, 3" BORE; BORE 23, 2" BORE; BORE 24, 3" BORE TO BE USED AS A 3" MAIN AT PAVED SURFACE CROSSING; 3" HDPE TO PVC MECHANICAL JOINT COUPLINGS WITH TRANSITION GASKETS; 3" CLASS 200 PVC MAIN LINE AT POINTS OF CONNECTION SHOWN PER PLAN; 4"x3"x3" MJ TEE AT EAST SIDE OF ROW; 2" IRRIGATION SUBMAIN ISOLATION VALVE; 2" CLASS 200 PVC IRRIGATION SUBMAIN; IRRIGATION MAIN/SUBMAIN PRESSURE CHECK POINT; HUNTER ICV SERIES 1" ZONE CONTROL VALVE AS SPECIFIED PER PLAN & BID DOCUMENTS; HUNTER PROS-12-R, PRO-SPRAY SERIES 12" HIGH POP-UP SPRAY HYDRANT WITH TORO PRECISION SERIES SPRAY NOZZLES; HUNTER PROS-6-R, PRO-SPRAY SERIES 6" HIGH POP-UP SPRAY HYDRANT WITH TORO PRECISION SERIES SPRAY NOZZLES; HUNTER PROS-SR, PRO-SPRAY SERIES SHRUB RISER SPRAY NOZZLE ADAPTER WITH RAINBIRD 1404 PRESSURE COMPENSATING UMBRELLA TYPE BUBBLER NOZZLE FOR TREES DESIGNATED PER THIS ALTERNATE BID; CLASS 200 PVC LATERAL LINE PIPING FOR ZONE C2-8 FROM ZONE CONTROL VALVE TO TREES/PALMS DESIGNATED FOR THIS ALTERNATE BID, PROVIDE TEES WITH THREADED PLUGS AT OUTLETS DESIGNATED FOR TREES/PALMS TO BE INSTALLED AT OTHER ALTERNATE BIDS SERVICED BY THE INSTALLED PIPING SECTION; EXISTING IRRIGATION SYSTEM ADAPTER WITH RAINBIRD 1404 PRESSURE COMPENSATING UMBRELLA TYPE BUBBLER NOZZLE FOR TREES DESIGNATED PER THIS ALTERNATE BID; CLASS 200 PVC LATERAL LINE PIPING FOR ZONE C2-8 FROM ZONE CONTROL VALVE TO TREES/PALMS DESIGNATED FOR THIS ALTERNATE BID, PROVIDE TEES WITH THREADED PLUGS AT OUTLETS DESIGNATED FOR TREES/PALMS TO BE INSTALLED AT OTHER ALTERNATE BIDS SERVICED BY THE INSTALLED PIPING SECTION; PROPOSED ZONES C2-1, C2-2 & C2-8 ELEMENTS SHOWN/DESIGNATED; EXISTING IRRIGATION SYSTEM ZONE CONTROL VALVES & HYDRANTS REMOVAL AND EXISTING MAIN LINE CAPPING AT THE AREAS AFFECTED BY THE PROPOSED ALTERNATE BID WORK. REFER TO CONSTRUCTION AND BID DOCUMENTS FOR CORRESPONDING INFORMATION.
- PHASE 2 BID ALTERNATE 3 - WOODSHIRE LANE RIGHT OF WAY AREAS**
- HUNTER ICD-400, 4 STATION DECODER; PAIGE 12-2 MAXIWIRE, 12 GAUGE CONTROL WIRE FOR TWO-WIRE TECHNOLOGY DECODER CONTROL SYSTEMS; SLEEVES 29 & 32, 4" SCH 40 PVC; 3" IRRIGATION MAIN ISOLATION VALVE; 3" CLASS 200 PVC IRRIGATION MAIN; HUNTER ICV SERIES 1" ZONE CONTROL VALVE AS SPECIFIED PER PLAN & BID DOCUMENTS; HUNTER I-20-6P-ADJ, I-20 SERIES 6" ROTOR HEADS; HUNTER PROS-12-R, PRO-SPRAY SERIES 12" HIGH POP-UP SPRAY HYDRANT WITH TORO PRECISION SERIES SPRAY NOZZLES; HUNTER PROS-6-R, PRO-SPRAY SERIES 6" HIGH POP-UP SPRAY HYDRANT WITH TORO PRECISION SERIES SPRAY NOZZLES; ADAPTER WITH RAINBIRD 1404 PRESSURE COMPENSATING UMBRELLA TYPE BUBBLER NOZZLE FOR TREES DESIGNATED PER THIS ALTERNATE BID; PROPOSED ZONES C2-3, C2-4, C2-5, C2-6, C2-7, C2-8 (SECOND PART OF ZONE), C2-9, C2-10, C2-11 & C2-12; IRRIGATION SUBMAIN; IRRIGATION MAIN/SUBMAIN PRESSURE CHECK POINT; HUNTER PROS-SR, PRO-SPRAY SERIES SHRUB RISER SPRAY NOZZLE ADAPTER WITH RAINBIRD 1404 PRESSURE COMPENSATING UMBRELLA TYPE BUBBLER NOZZLE FOR TREES DESIGNATED PER THIS ALTERNATE BID; CLASS 200 PVC LATERAL LINE PIPING FOR ZONE C2-8 FROM ZONE CONTROL VALVE TO TREES/PALMS DESIGNATED FOR THIS ALTERNATE BID, PROVIDE TEES WITH THREADED PLUGS AT OUTLETS DESIGNATED FOR TREES/PALMS TO BE INSTALLED AT OTHER ALTERNATE BIDS SERVICED BY THE INSTALLED PIPING SECTION; EXISTING IRRIGATION SYSTEM ZONE CONTROL VALVES & HYDRANTS REMOVAL AND EXISTING MAIN LINE CAPPING AT THE AREAS AFFECTED BY THE PROPOSED ALTERNATE BID WORK. REFER TO CONSTRUCTION AND BID DOCUMENTS FOR CORRESPONDING INFORMATION.

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**FOREST LAKES MSTU  
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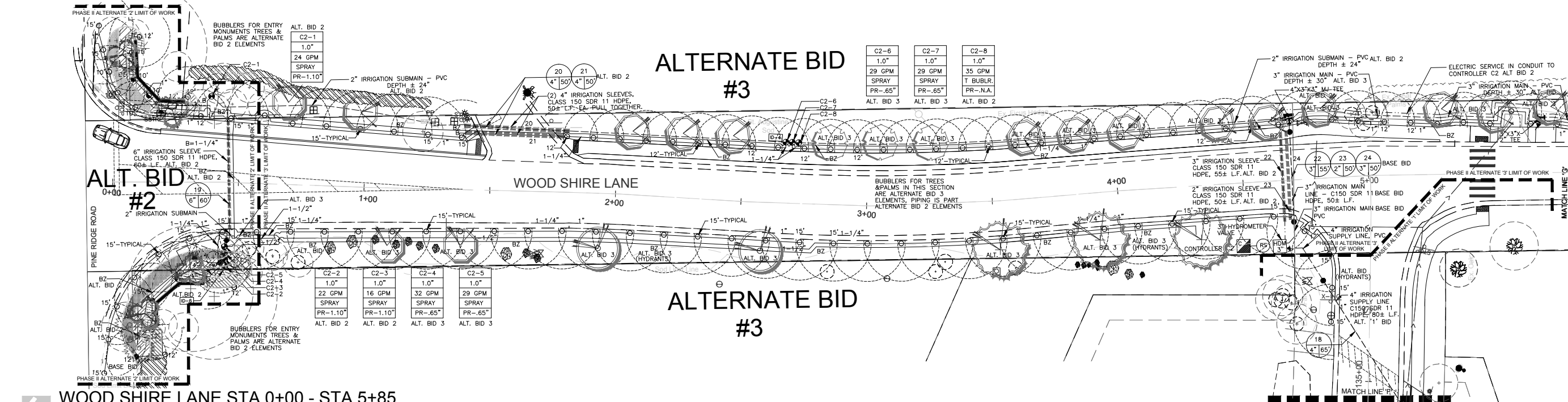
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IRRIGATION PLAN 3

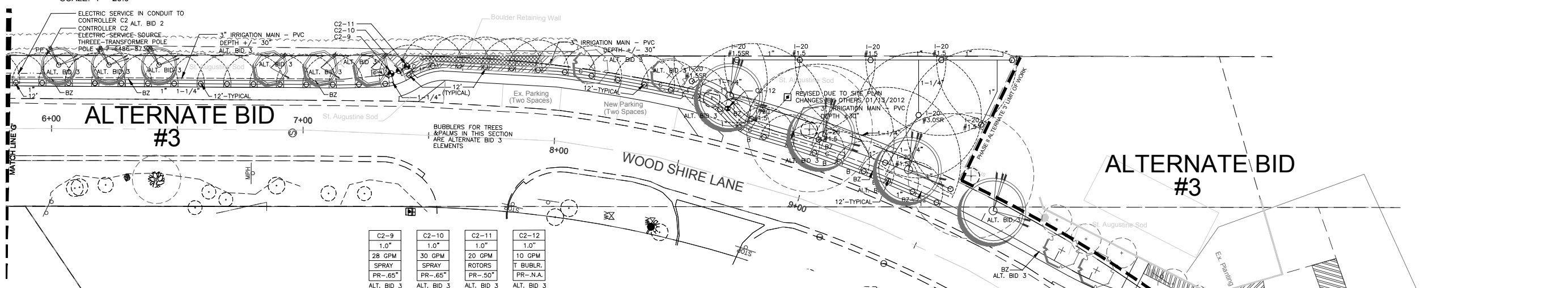
SHEET NUMBER:  
**IR-4**





WOOD SHIRE LANE STA 0+00 - STA 5+85

SCALE: 1" = 20.0'



WOOD SHIRE LANE STA 5+85 - STA 10+75

SCALE: 1" = 20.0'

**IRRIGATION PHASES BASE & ALTERNATE BIDS LIST**

- PHASE 2, BID ALTERNATE 2 - WOODSHIRE LANE ENTRY AREAS
- IRRIGATION POINT OF CONNECTION OF 4" SERVICE LINE TO 3" HYDROMETER, PROVIDE MJ REDUCING FITTING; BERMAID 3" HYDROMETER AS SPECIFIED; ELECTRIC SERVICE TO CONTROLLER AS SPECIFIED; HUNTER ACC-990P, ACC 99 STATIONS DECODER CONTROLLER WITH HUNTER SOLAR SYNC WEATHER SENSOR; HUNTER ICD-600, 6 STATION DECODER; HUNTER ICD-400, 4 STATION DECODER; PAGE 12-2 MAXIWIRE, 12 GAUGE CONTROL WIRE FOR TWO-WIRE TECHNOLOGY DECODER CONTROL SYSTEMS; DIRECTIONAL BORE 19, 6" BORE; DIRECTIONAL BORES 20 & 21, 4" BORES; BORE 22, 3" BORE; BORE 24, 3" BORE TO BE USED AS A 3" MAIN AT PAVED SURFACE CROSSING; 3" HDPE TO PVC MECHANICAL JOINT COUPLINGS WITH TRANSITIONAL GASKETS; 3" CLASS 200 PVC MAIN LINE AT POINTS OF CONNECTION SHOWN PER PLAN; 4"x3"x3" MJ TEE AT EAST SIDE OF ROW POC; 2" IRRIGATION SUBMAIN ISOLATION VALVE; 2" CLASS 200 PVC IRRIGATION SUBMAIN; IRRIGATION MAIN/SUBMAIN PRESSURE CHECK POINT; HUNTER ICV SERIES 1" ZONE CONTROL VALVE AS SPECIFIED PER PLAN & BID DOCUMENTS;
  - HUNTER PROS-12-R, PRO-SPRAY SERIES 12" HIGH POP-UP SPRAY HYDRANT WITH TORO PRECISION SERIES SPRAY NOZZLES; HUNTER PROS-6-R, PRO-SPRAY SERIES 6" HIGH POP-UP SPRAY HYDRANT WITH TORO PRECISION SERIES SPRAY NOZZLES; HUNTER PROS-SR, PRO-SPRAY SERIES SHRUB RISER SPRAY NOZZLE ADAPTER WITH RAINBIRD 1404 PRESSURE COMPENSATING UMBRELLA TYPE BUBBLER NOZZLE FOR TREES DESIGNATED PER THIS ALTERNATE BID; CLASS 200 PVC LATERAL LINE PIPING FOR ZONE C2-8 FROM ZONE CONTROL VALVE TO TREES/PALMS DESIGNATED FOR THIS ALTERNATE BID; PROVIDE TEES WITH THREADED PLUGS

**IRRIGATION PHASES BASE & ALTERNATE BIDS LIST**

- PHASE 2, BID ALTERNATE 2 - WOODSHIRE LANE ENTRY AREAS
- AT OUTLETS DESIGNATED FOR TREES/PALMS TO BE INSTALLED AT OTHER ALTERNATE BIDS SERVICED BY THE INSTALLED PIPING SECTION; EXISTING IRRIGATION SYSTEM ADAPTER WITH RAINBIRD 1404 PRESSURE COMPENSATING UMBRELLA TYPE BUBBLER NOZZLE FOR TREES DESIGNATED PER THIS ALTERNATE BID; CLASS 200 PVC LATERAL LINE PIPING FOR ZONE C2-8 FROM ZONE CONTROL VALVE TO TREES/PALMS DESIGNATED FOR THIS ALTERNATE BID; PROVIDE TEES WITH THREADED PLUGS AT OUTLETS DESIGNATED FOR TREES/PALMS TO BE INSTALLED AT OTHER ALTERNATE BIDS SERVICED BY THE INSTALLED PIPING SECTION; PROPOSED ZONES C2-1, C2-2 & C2-8 ELEMENTS SHOWN/DESIGNATED; EXISTING IRRIGATION SYSTEM ZONE CONTROL VALVES & HYDRANTS REMOVAL AND EXISTING MAIN LINE CAPPING AT THE AREAS AFFECTED BY THE PROPOSED ALTERNATE BID WORK, REFER TO CONSTRUCTION AND BID DOCUMENTS FOR CORRESPONDING INFORMATION.
- REFER TO SHEET IR-8 FOR ENTIRE LIST OF PHASES IRRIGATION BASE & ALTERNATE BIDS LIST

**GENERAL IRRIGATION NOTES**

- PIPING AND OTHER IRRIGATION SYSTEM ELEMENTS ARE SHOWN ON PAVED OR OTHER NON-LANDSCAPE DESIGNATED AREAS FOR GRAPHIC CLARITY ONLY. ACTUAL LOCATION SHALL BE WITHIN LANDSCAPE DESIGNATED AREA OR AS DIRECTED BY LANDSCAPE ARCHITECT.
- THE IRRIGATION SYSTEM'S WATER SOURCE IS A PROPOSED 2" EFFLUENT WATER METER THAT IS CONNECTED TO THE CITY OF NAPLES EFFLUENT WATER SYSTEM SERVICE, AT THE PROJECT'S PHASE 1 AREA. EFFLUENT WATER WILL BE CONDUCTED THROUGH A 4" SERVICE LINE FROM THE PROJECT'S PHASE 1 AREA TO THE PROJECT'S PHASE 2 AREA. A 3" HYDROMETER VALVE WITH AN ELECTRIC SOLENOID AND PRESSURE REDUCING PILOT SHALL BE INSTALLED AND USED AS A FLOW MANAGEMENT/RECORDING DEVICE FOR THE PHASE 2 SYSTEM. THE PRESSURE REDUCING PILOT SHALL BE ADJUSTED DOWN TO 60# PSI.
- PROVIDE CLASS 150 SDR 11 HDPE SECTIONS AT ALL MAIN LINE CROSSINGS TO BE USED AS AN ENTIRE MAIN LINE SECTION FOR THE ENTIRE CROSSING, ALL PVC TO SDR11 HDPE CONNECTIONS SHALL BE DONE WITH LEAK-PROOF MECHANICAL JOINT COUPLINGS WITH TRANSITIONAL GASKETS. ALL CONNECTIONS OF THIS NATURE SHALL BE MADE IN ACCORDANCE TO THE CORRESPONDING MANUFACTURER AND ANWA CURRENT SPECIFICATIONS.
- PROVIDE CLASS 150 SDR 11 HDPE CASINGS AS SIZED PER PLAN AT ALL EXISTING PAVED SURFACE CROSSINGS WHERE ELECTRICAL SERVICE AND ZONE CONTROL WIRES, AS WELL AS LATERAL LINE PIPING ARE TO OCCUR. WHERE POSSIBLE AND PRACTICAL, DIRECTIONAL BORE CASINGS MAY BE PULLED TOGETHER.
- PROVIDE SCH 40 PVC CASINGS AS SIZED PER PLAN AT ALL SIDEWALKS AND OR PAVED SURFACE CROSSINGS WHERE FLOW CONTROL WIRES, AS WELL AS LATERAL LINE PIPING ARE TO OCCUR. AT LOCATIONS WHERE NEW SIDEWALK IS SCHEDULED TO OCCUR.
- PROVIDE CASING LOCATION BALLS AT EACH CASING END. IRRIGATION CASINGS SHALL EXTEND 7' BEYOND THE PAVEMENT LIMITS AT EDGE OF PAVEMENT WITH NO CURBING; 4" BEYOND THE EDGE OF PAVEMENT AT SIDEWALKS AND CROSSINGS WITH CURBING. SEAL ALL OPEN CASING OPENINGS WITH SEALING FOAM.

**GENERAL IRRIGATION NOTES**

- IRRIGATION CONTRACTOR, OWNER, AND LANDSCAPE ARCHITECT SHALL DETERMINE THE FINAL LOCATION FOR THE IRRIGATION CONTROLLER. IRRIGATION CONTRACTOR SHALL PROVIDE DEDICATED POWER SUITABLE FOR CONTROLLER OPERATION, IN CONDUIT TO CONTROLLER. INCLUDE ALL HARDWARE AND LABOR NECESSARY.
- PROVIDE: (1) BUBBLER PER PROPOSED TREE/PALM. THE BUBBLER SHALL BE PRESSURE COMPENSATING FLOOD TYPE, 5 GPM BUBBLER. THE BUBBLER SHALL BE PLACED AT THE EDGE OF THE ROOTBALL, NOT NEXT TO THE TRUNK. REFER TO THE BUBBLER REFERENCE CHART FOR BUBBLER ADJUSTMENTS.
- THE PROPOSED LANDSCAPE LAYOUT SHOWN IS SHOWN FOR GRAPHIC REFERENCE OF THE PROPOSED LANDSCAPE LAYOUT. LANDSCAPE LAYOUT CHANGES BY OTHERS MAY TAKE PLACE AT ANY TIME. THE IRRIGATION CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING AND COORDINATING WITH THE LANDSCAPE ARCHITECT AND LANDSCAPE CONTRACTOR AT ALL TIMES FOR POTENTIAL LANDSCAPE LAYOUT CHANGES. THE IRRIGATION CONTRACTOR SHALL BE RESPONSIBLE FOR MAKING FIELD ADJUSTMENTS AS NEEDED.
- DUE TO THE DISTANCE FROM THE IRRIGATION WATER SOURCE LOCATION TO THE WOODSHIRE LANE SYSTEM ZONES THE ZONES HAVE BEEN DESIGN TO HAVE A LOW FLOW DEMAND IN ORDER TO REDUCE FRICTION LOSSES AND MINIMIZE THE PRESSURE SURGE (WATER HAMMER) POTENTIAL.
- ALTHOUGH THE SPRAY TYPE HYDRANTS MANUFACTURER SPECIFIED IS HUNTER, THE SPRAY NOZZLES SPECIFIED TO BE USED ARE THE TORO PRECISION SERIES FOR HUNTER/RAINBIRD HYDRANT THREADS.
- ALL DIRECTIONAL CHANGE FITTINGS AT THE 4" SUPPLY LINE AND 3" IRRIGATION MAIN SHALL BE DUCTILE IRON PIPE FITTINGS WITH FLANGED CONNECTIONS. ALL POINTS SUBJECT TO PRESSURE SURGE IMPACT SHALL BE THRUST BLOCKED.
- REFER TO THE CORRESPONDING PLAN SHEETS LABELING TO DIFFER BETWEEN THE PROPOSED BASE BID ITEMS AND THE PROPOSED ALTERNATE BID ITEMS FOR THE WOODSHIRE LANE SYSTEM SUBJECT PHASE SUBJECT TO BIDDING PER THIS SET OF CONSTRUCTION DOCUMENTS.
- THE LANDSCAPE LAYOUT SHOWN IS FOR GRAPHIC REFERENCE OF A PROPOSED LANDSCAPE LAYOUT THAT IS SUBJECT TO DESIGN/LAYOUT CHANGES. THE IRRIGATION CONTRACTOR SHALL COORDINATE AT ALL TIMES WITH THE LANDSCAPE ARCHITECT AND LANDSCAPE CONTRACTOR TO REVIEW AND COORDINATE SO THAT THE PROPOSED IRRIGATION DESIGN IS SUITABLE FOR THE FINAL LANDSCAPE DESIGN LAYOUT. PROVIDE IRRIGATION LAYOUT ADJUSTMENTS AS NEEDED IN ORDER TO COORDINATE WITH THE FINAL LANDSCAPE DESIGN.

**REFERENCE IRRIGATION LEGEND**

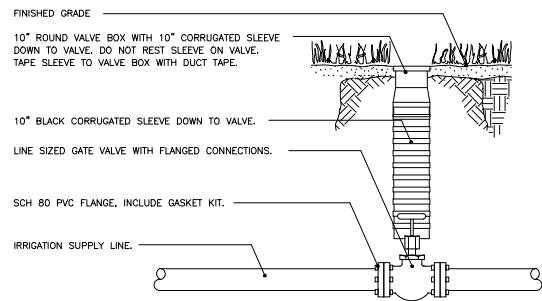
SYMBOL	DESCRIPTION
	IRRIGATION WATER SOURCE: PROPOSED CITY OF NAPLES SERVICE 2" EFFLUENT WATER METER. FLOW CAPACITY: 125+/- GPM, REQUIRED MINIMUM PRESSURE, 60# PSI. BERMAID 3" HYDROMETER WITH ELECTRIC SOLENOID, PRESSURE REDUCING VALVE, FLANGED CONNECTIONS.
	ELECTRIC SERVICE WIRE IN 1.25" SCH 80 PVC CONDUIT FROM POWER POLE TO CONTROLLER C2 LOCATION.
	HUNTER ACC 18 STATIONS IRRIGATION CONTROLLER FOR CONVENTIONAL MULTI-WIRE SYSTEMS, WITH RAIN SENSOR. REFER TO PLAN AND SPECIFICATIONS LEGEND FOR SPECIFIC CONTROLLER INFORMATION. EXISTING PHASE 1 ELEMENT, NOT IN THIS CONTRACT.
	HUNTER ACC 99 STATIONS IRRIGATION CONTROLLER FOR TWO-WIRE DECODER SYSTEMS, WITH RAIN SENSOR. REFER TO PLAN AND SPECIFICATIONS LEGEND FOR SPECIFIC CONTROLLER INFORMATION.
	HUNTER ACC SERIES CONTROL SYSTEM 2, 4 & 6 STATIONS DECODER FOR TWO-WIRE CONTROL SYSTEM TECHNOLOGY.
	IRRIGATION MAIN LINE PRESSURE CHECK POINT. REFER TO DETAIL.
	PROPOSED CASING/SLEEVES: AS SIZED PER PLAN.
	4" CLASS 200 PVC IRRIGATION SUPPLY LINE W/ HARCO DIP FITTINGS, P. PURPLE 522C

**REFERENCE IRRIGATION LEGEND**

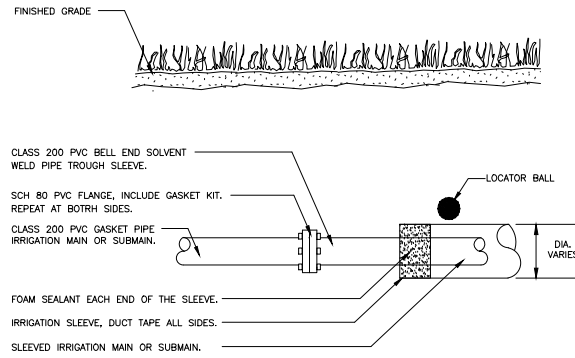
SYMBOL	DESCRIPTION
	3" OR 2" CLASS 200 PVC IRRIGATION MAIN OR SUBMAIN, PANTOME PURPLE 522C
	4" OR 3" CLASS 150 SDR 11 HDPE CASING TO BE USED AS SUPPLY LINE OR MAIN AT PAVED SURFACE CROSSINGS. USE MECHANICAL JOINT COUPLINGS WITH TRANSITIONAL GASKETS FOR CONNECTING TO PVC. REFER TO PLAN FOR SIZES.
	3" MECHANICAL JOINT COUPLING WITH TRANSITIONAL GASKETS FOR CONNECTING PVC MAIN LINE SECTIONS TO HDPE MAIN LINE SECTIONS. REFER TO PLAN FOR SIZES.
	CLASS 200 PVC PIPING, LAVENDER COLOR. PIPE SIZES: 1" = A; B=1-1/4" C=1-1/2"; D=2"
	3" MAIN LINE ISOLATION GATE VALVE. FLANGED CONNECTIONS.
	PROPOSED ZONE CONTROL VALVE WITH ISOLATION VALVE & PRES. REGULATOR.
	IRRIGATION MAIN LINE BLOW-OFF ASSEMBLY. SEE DETAIL.
	12" HIGH POP-UP SPRAY HYDRANT WITH TORO PRECISION SERIES NOZZLE
	TORO PRECISION SERIES SIDESTRIP NOZZLE ON 12" POP-UP SPRAY HYDRANT
	TORO PRECISION SERIES SIDESTRIP NOZZLE ON 12" POP-UP SPRAY HYDRANT
	TORO PRECISION SERIES SIDESTRIP NOZZLE W/ADAPTER ON 60" PVC RISER
	5 GPM BUBBLER NOZZLE ON 4" POP-UP BODY, ONE UNIT PER LINE.
	BUBBLERS TO PALMS / TREES, BZ = 1-1/4" LINE. SEE TREE LEGEND.
	C2-7 - CONTROLLER NUMBER - VALVE NUMBER
	1.0" - ZONE CONTROL VALVE SIZE
	42 GPM - ESTIMATED FLOW DEMAND
	SPRAY - HYDRANT TYPE APPLICATION
	PR 1.5" - ESTIMATED APPLICATION RATE, IN INCHES PER HOUR.
	BASE BID - BASE BID ZONE ITEMS (ZONE CONTROL VALVE, HYDRANTS AND PIPING LABELED).
	ALT. BID - ALTERNATE BID ZONE ITEMS (ZONE CONTROL VALVE, HYDRANTS AND PIPING LABELED).

**REFERENCE IRRIGATION LEGEND**

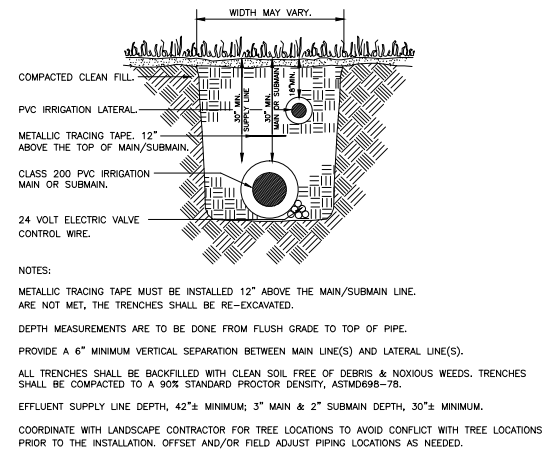
SYMBOL	DESCRIPTION
	12" HIGH POP-UP ROTARY GEAR DRIVE HYDRANT WITH NOZZLE AS SPECIFIED
	6" POP-UP ROTARY GEAR DRIVE HYDRANT WITH NOZZLE AS SPECIFIED
	12" HIGH POP-UP SPRAY HYDRANT WITH TORO PRECISION SERIES NOZZLE
	TORO PRECISION SERIES SIDESTRIP NOZZLE ON 12" POP-UP SPRAY HYDRANT
	TORO PRECISION SERIES SIDESTRIP NOZZLE ON 12" POP-UP SPRAY HYDRANT
	TORO PRECISION SERIES SIDESTRIP NOZZLE W/ADAPTER ON 60" PVC RISER
	5 GPM BUBBLER NOZZLE ON 4" POP-UP BODY, ONE UNIT PER LINE.
	BUBBLERS TO PALMS / TREES, BZ = 1-1/4" LINE. SEE TREE LEGEND.
	C2-7 - CONTROLLER NUMBER - VALVE NUMBER
	1.0" - ZONE CONTROL VALVE SIZE
	42 GPM - ESTIMATED FLOW DEMAND
	SPRAY - HYDRANT TYPE APPLICATION
	PR 1.5" - ESTIMATED APPLICATION RATE, IN INCHES PER HOUR.
	BASE BID - BASE BID ZONE ITEMS (ZONE CONTROL VALVE, HYDRANTS AND PIPING LABELED).
	ALT. BID - ALTERNATE BID ZONE ITEMS (ZONE CONTROL VALVE, HYDRANTS AND PIPING LABELED).



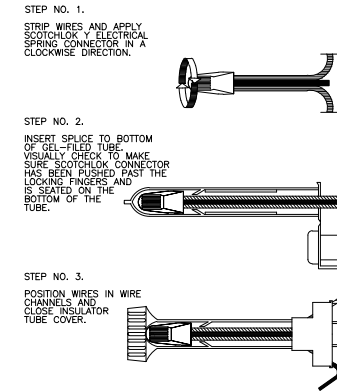
**MAIN LINE ISOLATION MANUAL GATE VALVE INSTALLATION DETAIL**  
N.T.S.



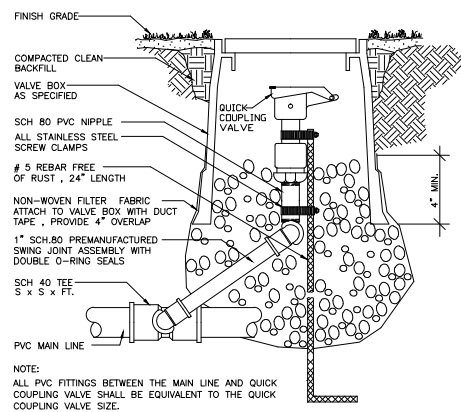
**IRRIGATION SLEEVE SEALING DETAIL**  
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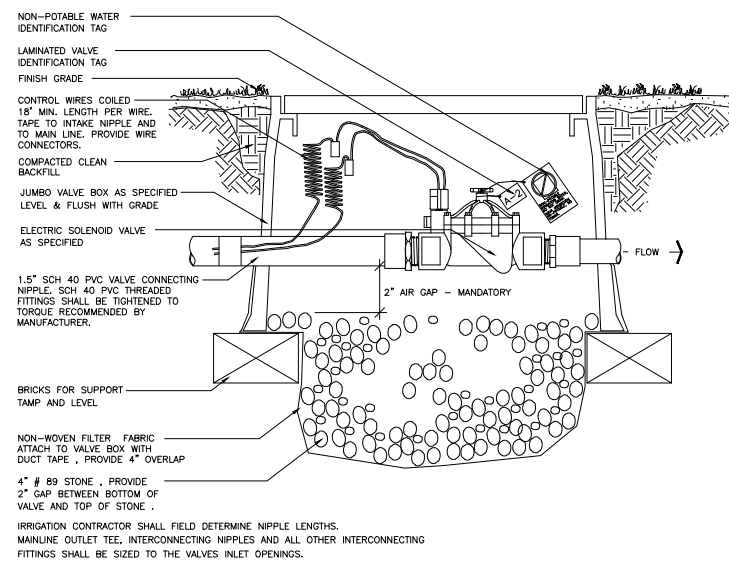
**TYPICAL TRENCHING DETAIL**  
N.T.S.



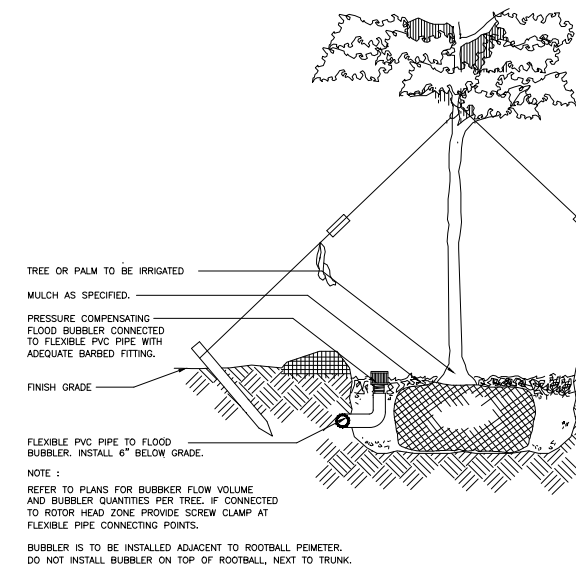
**24 VOLT WIRE CONNECTION DETAIL**  
N.T.S.



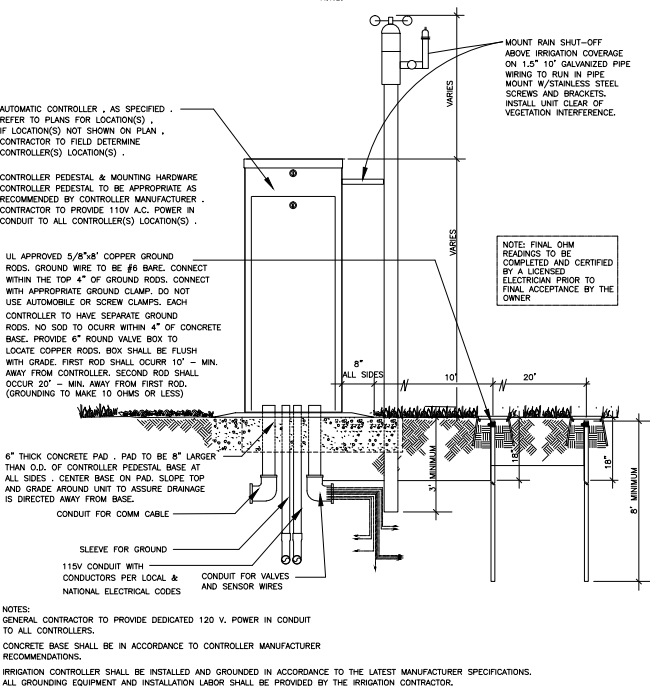
**QUICK COUPLING VALVE INSTALLATION DETAIL**  
N.T.S.



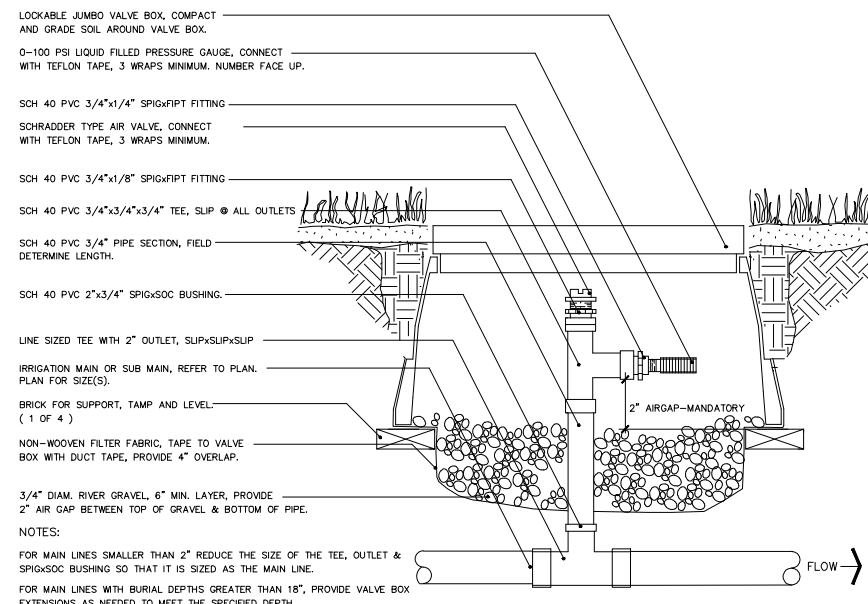
**ELECTRIC SOLENOID VALVE INSTALLATION DETAIL**  
N.T.S.



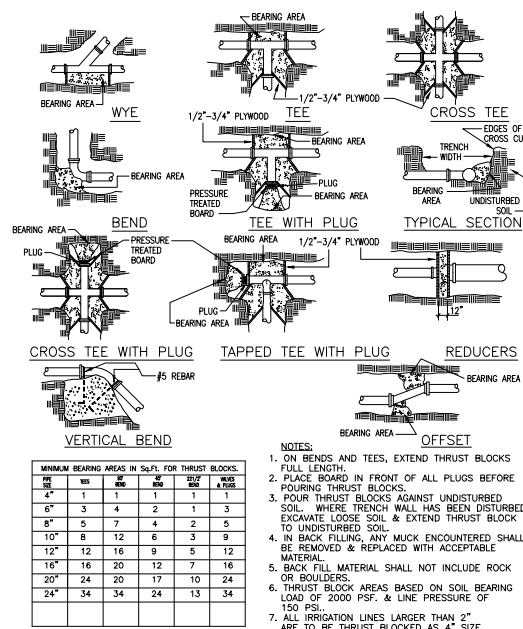
**TREE IRRIGATION FLOOD BUBBLER BELOW GRADE, INSTALLATION DETAIL**  
N.T.S.



**PEDESTAL MOUNTED CONTROLLER INSTALLATION DETAIL**  
N.T.S.



**IRRIGATION MAIN LINE PRESSURE CHECK UNIT INSTALLATION DETAIL**  
N.T.S.



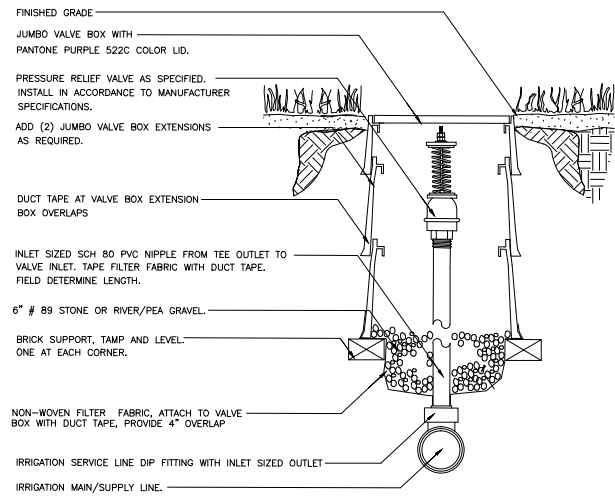
**TYPICAL THRUST BLOCKS INSTALLATION DETAIL**  
N.T.S.

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**FOREST LAKES MSTU BOND PROJECT F-58**  
COLLIER COUNTY, FLORIDA  
PREPARED FOR: COLLIER COUNTY D.O.T.

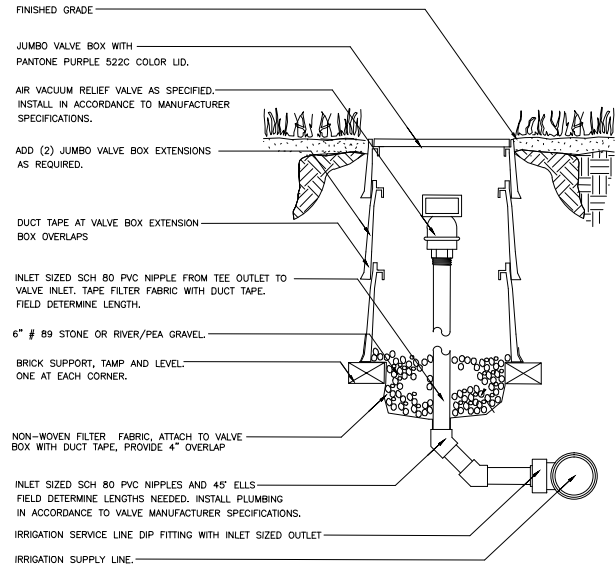
JOB #: 034-09  
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**IRRIGATION DETAILS I**  
SHEET NUMBER: **IR-6**  
Date: 11-02-11  
Revision Date: 01-24-11, 02-01-11, 03-01-11, 04-05-11  
Revision Date: 01-18-12 (Plan 2: 1899 Add. Material)  
Revision Date: 04-02-2012 (Rev. 2: Revised Bid. Material)



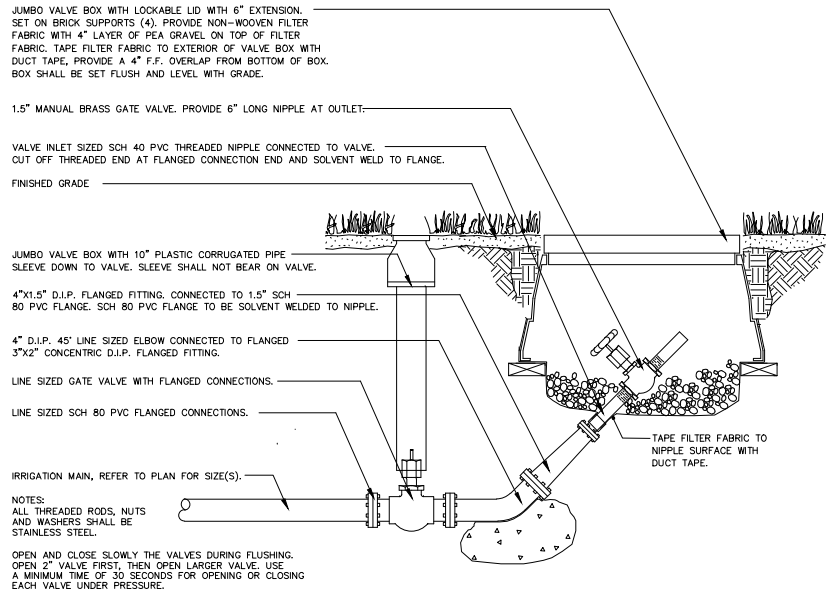
**MAIN LINE PRESSURE RELIEF VALVE INSTALLATION DETAIL**

N.T.S.



**MAIN LINE AIR VACUUM RELEASE VALVE INSTALLATION DETAIL**

N.T.S.



**IRRIGATION MAIN BLOW-OFF INSTALLATION DETAIL**

N.T.S.

**IRRIGATION PHASES BASE & ALTERNATE BIDS LIST**

**PHASE 2 BASE BID - FOREST LAKES BOULEVARD/TURTLE LAKE GOLF ROW**

- EXISTING IRRIGATION SYSTEMS REPAIR(S) AND MODIFICATION(S) NECESSARY DUE TO NEW SIDEWALK CONSTRUCTION; PROVIDE REPAIR(S) AND MODIFICATIONS TO EXISTING IRRIGATION SYSTEMS AFFECTED BY THE NEW SIDEWALK CONSTRUCTION ALONG FOREST LAKES BOULEVARD RIGHT OF WAY. REFER TO THE 250' SCHEMATIC SHOWN ON SHEET IR-3 FOR CONCEPT REFERENCE. IT SHALL BE THE IRRIGATION CONTRACTOR'S RESPONSIBILITY TO REVIEW EACH SITE AND PROVIDE REPAIRS/MODIFICATIONS THAT ARE REPRESENTATIVE OF THE SCHEMATIC GRAPHIC CONCEPT PRESENTED ON SHEET IR-3.

**PHASE 2 BID ALTERNATE 1 - FOREST LAKES BOULEVARD/TURTLE LAKE GOLF ROW**

- IRRIGATION POINT OF CONNECTION TO PHASE 1A EXISTING SYSTEM: 4" CLASS 200 PVC IRRIGATION SERVICE LINE, 30" DEPTH; 4" CLASS 150 SDR 11 EXTRAMOLECULAR STRENGTH HDPE CASING TO BE USED AS IRRIGATION SERVICE LINE UNDER PAVED SURFACES; 4" HDPE TO PVC MECHANICAL JOINT COUPLINGS WITH TRANSITIONAL GASKETS; WATERMAN AA-6, 2" PRESSURE RELIEF VALVES; WATERMAN AV-150, 1.5" AIR VACUUM RELIEF VALVES; IRRIGATION MAIN/SUBMAIN SERVICE LINE PRESSURE CHECK POINTS; 4" IRRIGATION SERVICE LINE ISOLATION GATE VALVES. REFER TO CONSTRUCTION AND BID DOCUMENTS FOR CORRESPONDING INFORMATION.

**PHASE 2 BID ALTERNATE 2 - WOODSHIRE LANE ENTRY AREAS**

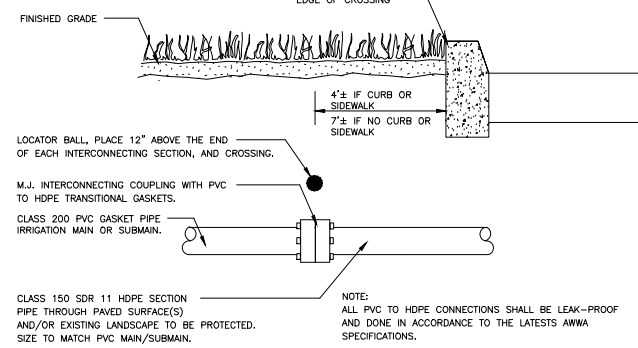
- IRRIGATION POINT OF CONNECTION OF 4" SERVICE LINE TO 3" HYDROMETER. PROVIDE MJ REDUCING FITTING; BERNAD 3" HYDROMETER AS SPECIFIED; ELECTRIC SERVICE TO CONTROLLER AS SPECIFIED; HUNTER ACC-990P, ACC 99 STATIONS DECODER CONTROLLER WITH HUNTER SOLAR SYNC WEATHER SENSOR; HUNTER ICD-600, 6 STATION DECODER; HUNTER ICD-400, 4 STATION DECODER; PAGE 12-2 MAXIWIRE, 12 GAUGE CONTROL WIRE FOR TWO-WIRE TECHNOLOGY DECODER CONTROL SYSTEMS; DIRECTIONAL BORE 19, 6" BORE; DIRECTIONAL BORES 20 & 21, 4" BORES; BORE 22, 3" BORE; BORE 23, 2" BORE; BORE 24, 3" BORE TO BE USED AS A 3" MAIN AT PAVED SURFACE CROSSING; 3" HDPE TO PVC MECHANICAL JOINT COUPLINGS WITH TRANSITION GASKETS; 3" CLASS 200 PVC MAIN LINE AT POINTS OF CONNECTION SHOWN PER PLAN; 4"x3"x3" MJ TEE AT EAST SIDE OF ROW POC; 2" IRRIGATION SUBMAIN ISOLATION VALVE; 2" CLASS 200 PVC IRRIGATION SUBMAIN; IRRIGATION MAIN/SUBMAIN PRESSURE CHECK POINT; HUNTER ICV SERIES 1" ZONE CONTROL VALVE AS SPECIFIED PER PLAN & BID DOCUMENTS; HUNTER PROS-12-R, PRO-SPRAY SERIES 12" HIGH POP-UP SPRAY HYDRANT WITH TORO PRECISION SERIES SPRAY NOZZLES; HUNTER PROS-6-R, PRO-SPRAY SERIES 6" HIGH POP-UP SPRAY HYDRANT WITH TORO PRECISION SERIES SPRAY NOZZLES; HUNTER PROS-SR, PRO-SPRAY SERIES SHRUB RISER SPRAY NOZZLE ADAPTER WITH RAINBIRD 1404 PRESSURE COMPENSATING UMBRELLA TYPE BUBBLER NOZZLE FOR TREES DESIGNATED FOR THIS ALTERNATE BID; CLASS 200 PVC LATERAL LINE PIPING FOR ZONE C2-8 FROM ZONE CONTROL VALVE TO TREES/PALMS DESIGNATED FOR THIS ALTERNATE BID, PROVIDE TEES WITH THREADED PLUGS AT OUTLETS DESIGNATED FOR TREES/PALMS TO BE INSTALLED AT OTHER ALTERNATE BIDS SERVICED BY THE INSTALLED PIPING SECTION; EXISTING IRRIGATION SYSTEM ADAPTER WITH RAINBIRD 1404 PRESSURE COMPENSATING UMBRELLA TYPE BUBBLER NOZZLE FOR TREES DESIGNATED PER THIS ALTERNATE BID; CLASS 200 PVC LATERAL LINE PIPING FOR ZONE C2-8 FROM ZONE CONTROL VALVE TO TREES/PALMS DESIGNATED FOR THIS ALTERNATE BID, PROVIDE TEES WITH THREADED PLUGS AT OUTLETS DESIGNATED FOR TREES/PALMS TO BE INSTALLED AT OTHER ALTERNATE BIDS SERVICED BY THE INSTALLED PIPING SECTION; PROPOSED ZONES C2-1, C2-2 & C2-8 ELEMENTS SHOWN/DESIGNATED; EXISTING IRRIGATION SYSTEM ZONE CONTROL VALVES & HYDRANTS REMOVAL AND EXISTING MAIN LINE CAPPING AT THE AREAS AFFECTED BY THE PROPOSED ALTERNATE BID WORK. REFER TO CONSTRUCTION AND BID DOCUMENTS FOR CORRESPONDING INFORMATION.

**PHASE 2 BID ALTERNATE 3 - WOODSHIRE LANE RIGHT OF WAY AREAS**

- HUNTER ICD-400, 4 STATION DECODER; PAGE 12-2 MAXIWIRE, 12 GAUGE CONTROL WIRE FOR TWO-WIRE TECHNOLOGY DECODER CONTROL SYSTEMS; SLEEVES 29 & 32, 4" SCH 40 PVC; 3" IRRIGATION MAIN ISOLATION VALVE; 3" CLASS 200 PVC IRRIGATION MAIN; HUNTER ICV SERIES 1" ZONE CONTROL VALVE AS SPECIFIED PER PLAN & BID DOCUMENTS; HUNTER I-20-6P-ADJ, I-20 SERIES 6" ROTOR HEADS; HUNTER PROS-12-R, PRO-SPRAY SERIES 12" HIGH POP-UP SPRAY HYDRANT WITH TORO PRECISION SERIES SPRAY NOZZLES; HUNTER PROS-6-R, PRO-SPRAY SERIES 6" HIGH POP-UP SPRAY HYDRANT WITH TORO PRECISION SERIES SPRAY NOZZLES; ADAPTER WITH RAINBIRD 1404 PRESSURE COMPENSATING UMBRELLA TYPE BUBBLER NOZZLE FOR TREES DESIGNATED PER THIS ALTERNATE BID; PROPOSED ZONES C2-3, C2-4, C2-5, C2-6, C2-7, C2-8 (SECOND PART OF ZONE), C2-9, C2-10, C2-11 & C2-12; IRRIGATION SUBMAIN; IRRIGATION MAIN/SUBMAIN PRESSURE CHECK POINT; HUNTER PROS-SR, PRO-SPRAY SERIES SHRUB RISER SPRAY NOZZLE ADAPTER WITH RAINBIRD 1404 PRESSURE COMPENSATING UMBRELLA TYPE BUBBLER NOZZLE FOR TREES DESIGNATED PER THIS ALTERNATE BID; CLASS 200 PVC LATERAL LINE PIPING FOR ZONE C2-8 FROM ZONE CONTROL VALVE TO TREES/PALMS DESIGNATED FOR THIS ALTERNATE BID, PROVIDE TEES WITH THREADED PLUGS AT OUTLETS DESIGNATED FOR TREES/PALMS TO BE INSTALLED AT OTHER ALTERNATE BIDS SERVICED BY THE INSTALLED PIPING SECTION; PROPOSED ZONES C2-1, C2-2 & C2-8 ELEMENTS SHOWN/DESIGNATED; EXISTING IRRIGATION SYSTEM ZONE CONTROL VALVES & HYDRANTS REMOVAL AND EXISTING MAIN LINE CAPPING AT THE AREAS AFFECTED BY THE PROPOSED ALTERNATE BID WORK. REFER TO CONSTRUCTION AND BID DOCUMENTS FOR CORRESPONDING INFORMATION.

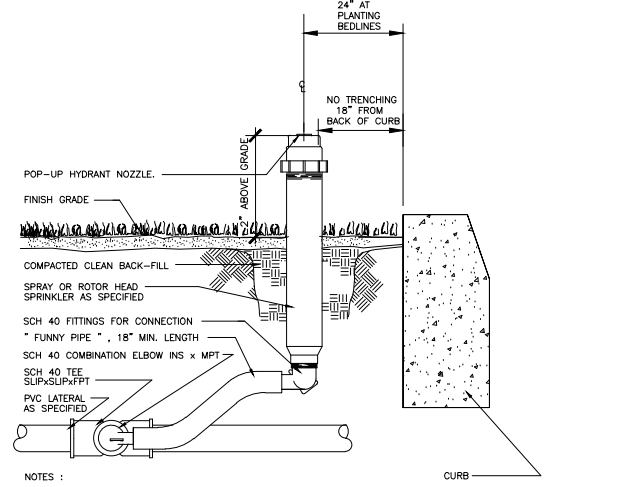
**PHASE 3 BID ALTERNATE 5 - WEST ENTRY ROW PROPOSED TURN LANE & SIDEWALK**

- PROVIDE PROPOSED POINT OF CONNECTION AT EXISTING ZONE CONTROL VALVES MANIFOLD; CONNECT PROPOSED ZONE CONTROL VALVE WIRE (AWG 14 GAUGE) TO EXISTING CONTROLLER; HUNTER ICV SERIES 1.5" ZONE CONTROL VALVE AS SPECIFIED PER PLAN & BID DOCUMENTS; PROVIDE PROPOSED DIRECTIONAL BORES AND SLEEVES: 5B - 2" SCH 40 PVC SLEEVE, 5C - 2" HDPE DIRECTIONAL BORE, 5D - 3" HDPE DIRECTIONAL BORE, 5E - 3" HDPE DIRECTIONAL BORE, 5F - 2" SCH 40 PVC SLEEVE; REMOVAL/RELOCATE 12x EXISTING 6" POP-UP SPRAY HEADS TO DESIGNATED LOCATIONS (REFER TO PLAN); HUNTER PROS-06-R, PRO-SPRAY SERIES 6" POP-UP SPRAY HYDRANT WITH TORO PRECISION SERIES SPRAY NOZZLES; HUNTER PROS-SR, PRO-SPRAY SERIES SHRUB RISER SPRAY NOZZLE ADAPTER WITH TORO PRECISION SERIES SPRAY NOZZLE MOUNTED ON 60"x1/2" SCH 80 PVC RISER; MODIFICATIONS TO EXISTING SYSTEM TO INCORPORATE PROPOSED SYSTEM ELEMENTS; RESTORE EXISTING LANDSCAPE DISTURBED BY PROPOSED IRRIGATION SYSTEM IMPROVEMENTS & ADDITIONS. REFER TO CONSTRUCTION AND BID DOCUMENTS FOR CORRESPONDING INFORMATION.



**IRRIGATION MAIN PVC TO HDPE CONNECTION DETAIL**

N.T.S.



- NOTES: NO SPRINKLER HEADS SHALL OCCUR WITHIN 18" FROM THE BACK OF CURB AT SOD AREAS, OR 24" FROM THE BACK OF CURB AT PLANTING AREAS. DO NOT OPERATE AT HIGH PRESSURE LEVELS. ADJUST THE ZONE CONTROL VALVE PRESSURE REGULATOR DIAL DOWN TO 50 PSI FOR ROTOR HEADS, AND 30 PSI FOR SPRAY HEADS.

**12" HIGH POP-UP SPRINKLER HEAD INSTALLATION DETAIL**

N.T.S.

**IRRIGATION NOTES**

**IRRIGATION NOTES CONTENT**

**A. GENERAL NOTES**

- The plans and drawings are diagrammatic of the work to be performed. The work shall be executed in a manner to avoid conflicts with utilities and other elements of construction including landscape materials. Any and all deviations shall be brought to the attention of the owner or owners. The contractor shall not willfully install any aspect of the irrigation system shown on the plans and drawings when it is obvious in the field that obstructions, grade differences, or discrepancies exist that might not have been known during the design of the irrigation system. In the event that notification of the conflict is not given to the representative, the contractor will assume full responsibility for all revisions.
- Irrigation system shall be installed in accordance with the plans, Irrigation System Specifications and all contract documents. Contractor shall comply with all prevailing local codes, ordinances and regulations.
- Check and verify all site conditions, including service utility locations, prior to trenching or digging. Coordinate all irrigation system construction with existing and/or new plantings to avoid conflict or interference with location of piping, sleeving, cables and service utilities. The irrigation contractor is responsible for coordinating installation with all other construction on site, especially landscape installation. Irrigation system is to be relocated at no additional cost for any conflict with landscape installation or any other site construction or existing conditions. All components that are not contained within the specific areas shown on the drawings will not be accepted. All piping and other components are to remain within the property of the OWNER.
- Where existing or new trees, light standards, signs, electronic controllers and/or other objects are an obstruction to an irrigation sprinkler's pattern, the components and piping shall be relocated as necessary to obtain proper coverage without damaging the obstruction. Landscape architect or representative to determine whether obstruction occurs or not.
- Component spacings are maximum. Do not exceed spacings shown or noted on the plans. Component spacings may be adjusted to accommodate changes in terrain and planting layout as long as the modified spacings do not exceed the spacings shown in the plans. Unless shown otherwise, irrigation contractor shall provide 100% coverage.
- All materials and equipment shown shall be installed as detailed on the plans. If the drawings do not thoroughly describe the techniques to be used, the installer shall follow the installation methods/instructions recommended by their manufacturer.
- Irrigation contractor shall adjust all sprinklers, controller and other devices to obtain specified operating characteristics, including coverage, operating pressure, flow rates and run times, as indicated on the drawings. The irrigation system shall conform to the specifications. Adjust all sprinklers to avoid overwater of water onto buildings, roadways, sidewalks or existing native vegetation.
- Contractor to provide installation shop drawings and manufacturer product information for all irrigation components. All installations shall be as recommended by manufacturers. The quantities shown in the legends and symbol sheets shall not be used for bidding purposes. The contractor will be responsible for conducting a comprehensive take-off of materials to determine the actual quantities of material necessary to execute the work described on the plans and drawings.
- All trenches shall be backfilled with clean, debris-free materials. Clean sand shall be used for bedding material if parent soil cannot be adequately rid of rock and other extraneous debris. Pulling pipe shall be prohibited.
- All solvent welding shall be preceded by priming of the fittings and pipe as recommended by the manufacturer.
- Contractor to label/number all zone valve covers with corresponding controller zone number and isolation valve box covers with record drawing numbers. Provide tags to all valves as shown per details.

**B. MAINLINE & PIPING**

- All irrigation main(s) & submain(s) shall be 1120-1220 class 200 PVC gasketed pipe with gasketed fittings. All pipes used downstream of each remote control valve shall be class 160 PVC solvent weld pipe. Unless shown otherwise.
- The depth of all lines shall be as specified per plans and details. Measurements shall be from top of pipe(s) to finish grade. Contractor will be responsible for retrenching and relaying any pipe not meeting specified depth(s).
- All mainlines will be installed with a tracing tape labeled "Non-potable Irrigation Main".
- All piping stubouts for future zone expansions shall have the end capped, and be located using a 6" valve box.

**C. SLEEVING**

- All crossings on existing surfaces not scheduled for renovation, whether shown or not shall be made using Class 150 SDR11 PE casings installed using directional boring technology. All crossings scheduled for construction or renovations shall be made using SCH 80 PVC piping or as specified by the project's engineer. All Submain sections going through paved surfaces crossings shall be Class 150 SDR 11 HDPE casing, entire sections for the crossing. All Class 150 SDR 11 HDPE to PVC connections shall be made using leak proof mechanical joint couplings with transitional gaskets.
- Small main & submain (2") sections, as well as PVC lateral lines, electric service and control wires having to cross paved surfaces shall be enclosed within a sleeve. The sleeve/casing material shall be directional bore installed Class 150 SDR 11 HDPE casing. The casing size shall be as specified or in a size that is suitable for accommodating the pipe within including interconnecting bell ends, and/or couplings. All main, submain or lateral line piping going through a sleeve shall be solvent weld piping.
- Irrigation contractor shall provide locating bolts at each end of all main/submain/lateral lines and wire crossing casings/sleeves going across vehicular crossings, or crossings in excess of ten feet.
- All directional bore installed casing/sleeves shall extend seven feet from the edge of pavement at crossing with no curb, and four feet at crossings with curb or sidewalks, and four feet at crossings with curb and/or sidewalks.
- All open trench installed casings/sleeves shall extend: 36" for main/submain; 12" for laterals, beyond the edge of the paved edge.
- Irrigation contractor shall coordinate with general contractor for the location of sleeve crossings whether shown or not. At no time will wiring share the same sleeve with main(s) or other piping. Wiring sleeves shall be dedicated only for wiring.
- All open sleeves/casings shall be sealed with sealing foam.

**D. ISOLATION VALVES**

- All isolation valves shall be brass. Isolation valves shall be sized as identified by symbols on the drawings, or by matching the size of the pipes they occur within. Valves of 3/4" through 2-1/2" shall be threaded, valves 3" and larger shall be flanged.
- All isolation valves installed along the mainline shall be installed with a valve box. Refer to details and specifications for valve box sizes. Contractor shall provide valve box extensions when necessary. Extensions may be made with black plastic corrugated pipe.

**E. QUICK COUPLER VALVES**

- All quick coupler valves shall be brass. Quick coupler valves shall occur at locations shown on the plans, if applicable. Quick coupler valves shall be installed within jumbo valve boxes, and as detailed on the drawings.
- The contractor shall furnish one (1) key and swivel assembly per (4) quick coupler valves.

**F. CONTROL SYSTEM**

- All controller(s) (each if applicable) will be installed in areas designated by the Irrigation Consultant. In the event that no areas are designated, the irrigation contractor shall determine and field locate all controller(s) and rain sensor(s) location(s). Controller(s) shall be located in areas accessible to maintenance personnel. Rain sensor(s) shall be installed in open areas as per manufacturer recommendations. General contractor to provide dedicated 120 V, power in conduit to all controller locations and provide electrical contractor to connect 120 V, power from source to timer. All hardware necessary must be included as part of connection service.
- All controller(s) (each if applicable) will be grounded using two eight foot (8') copper clad rods with #6 solid copper wire. Copper clamps will be used to attach the wire to the rods. If another controller is utilized, an earth ground of five (5) ohms or less shall be obtained on the grounding equipment. Grounding shall be done in accordance to the latest manufacturer specifications. Final OHM readings to be completed and certified by a licensed electrician prior to final acceptance by the owner.
- All controller(s) (each if applicable) will have a Mini-Weather Station sensor and by-pass switches installed to meet state and local codes. Mini-Weather Station sensors and by-pass switches also will be installed in accordance to manufacturer's guidelines. Units to be Hunter or equal, unless otherwise specified.
- It shall be the responsibility of the irrigation contractor to coordinate with other trades on site. Program or schedule the irrigation sequence for the irrigation system during construction and normal operation until final acceptance by the Irrigation Consultant. Controller & valve operation shall be chronological. Schedule (1) multiple start time per (2) minutes of spray head operation; (5) Minutes of Spray head single row coverage operation; (7) Minutes of rotary gear drive head operation; (5) Minutes of bubbler zone hydration.
- The Irrigation Contractor shall provide a laminated chart at each controller and pump station, that presents the controllers' activation sequence/schedule.
- REMOTE CONTROL VALVES**  
All control valves shall be installed as close as possible to the mainline(s) or submain(s) piping as possible. Control valves shall be type and size as specified herein and indicated on the drawings.
- Wire sizes for control valve connections to the controller will be insulated direct burial solid wire. Red wire will be used for activation, white wire for common, blue wire for future expansions, and green wire for spare. The contractor shall furnish sufficient wires to allow for: (1) spare and (1) future expansion, at valves located farthest distances away from the controller, and at each median's furthest valve location. The size of the wire will be specified on the drawings or AWG 12 gauge wire for ground at sections with distances greater than 2500 +/- feet; AWG 14 gauge for common/spare wire. AWG 14 Gauge wire is acceptable for ground wire at sections with lengths no greater than 1500 +/- feet.
- All electrical splices shall be made using 3M-DBY and 3M-3570 Scotchlock Seal Pack Connectors as detailed herein.

**H. VALVE & SPLICE BOXES**

- All valve boxes shall meet specifications, be sized & installed as shown and detailed herein. Top of valve boxes shall be level and 4 1/2" above final grade when installed. Contractor to reinstall and relevel boxes if soil settling occurs.
  - Where possible and feasible install valve boxes within planting bedlines. No valve boxes shall be installed within: 3' of a sidewalk or other pedestrian use surface, 5' from any vehicular roadways. Do NOT install at the bottom of swales(s) or any other low point.
- I. POP-UP SPRAYHEADS, TURF GEAR DRIVE HEADS, TURF BUBBLERS & TREE BUBBLERS**
- All sprinkler heads will be installed and connected to lateral lines as per details. The smallest pipe size allowed to connect sprinkler sprinkler heads shall be 1" or as specified per plan.
  - All pop-up spray heads occurring in turf areas shall be 6" sprayheads. Rotor heads shall be those as specified herein. All sprinkler heads occurring within low plantings (24" or lower - average mature height) shall be 12" high pop-up sprinklers. All sprinkler heads occurring within plantings (24" or greater - average mature height) shall be installed on SCH 80 PVC risers and "shrub" designated sprinkler adapters or 12" high pop-ups, unless otherwise shown on the drawings.
  - Sprayhead nozzle range shall be selected based on the spacings shown on the plans(s). The following guide lines shall be considered when selecting sprayhead nozzle ranges: 1'-4" spaces use side-spray nozzles; 5'-8" spaces use flat spray nozzles; 8'-11" spaces, 10" nozzles; 11'-13.5" spaces, 12" nozzles; 14'-16" spaces, 15" nozzles. The contractor shall consult with the Landscape Architect for arc adjustments if needed. The radius for rotor heads shall be adjusted to provide head to head coverage.
  - All trees and palms designated to have supplemental irrigation shall have it in the form of pressure compensating flood type bubblers. The bubblers shall be fixed volume, or adjustable. Provide (1) bubbler per designated tree/palm. The bubbler discharge rates per hydrant shall be the following: 1 - Large canopy trees & specimen palms, 2 GPM; 2 - Intermediate canopy trees & non-specimen palms, 1 GPM; 3 - Small canopy trees, Sabal & Thrinax palms, .5 GPM. Provide flow discharge adjustments for adjustable bubblers. Do not install the bubbler on top of the rootball adjacent to the trunk. Install the bubbler adjacent to the rootball perimeter, away from the trunk.

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**FOREST LAKES MSTU BOND PROJECT F-58**  
COLLIER COUNTY, FLORIDA  
PREPARED FOR: COLLIER COUNTY D.O.T.

JOB #: 034-09

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DATE: 11-02-11  
REVISED DATE: 01-24-12, 02-01-12, 04-05-12  
REVISION DATE: 01-28-12 (Phase 2, 100% Bid Document)  
REVISION DATE: 04-02-2012 (Rev. 2, Revised Bid Document)

**IRRIGATION DETAILS 2**

SHEET NUMBER: **IR-7**

## IRRIGATION APPLICATION CONTROL PARAMETERS

- CROPS TO IRRIGATE: WARM SEASON TURF GRASS, XERIC PLANTINGS, TREES, PALMS, SHRUBS AND GROUND COVERES.
- REQUIRED WEEKLY APPLICATION REQUIRED AT PEAK TIME OF THE YEAR: TURF GRASS, 1.25" PER WEEK; PLANTINGS 1.0" PER WEEK.
- ACREAGE TO IRRIGATE & REQUIRED FLOW DEMAND: 2± ACRES WHEN SYSTEM IS FULLY BUILT; 125±- GPM.
- RECOMMENDED OPERATING SCHEDULE: 3 NIGHTS PER WEEK, 8+/- HOURS PER NIGHT - EFFLUENT WATER USE EXEMPTION
- ESTIMATED SYSTEM APPLICATION RATES: SPRAY HEADS WITH SEMICIRCULAR PATTERNS IN FULL COVERAGE, 1.1"/- PER HOUR; SPRAY HEADS WITH CIRCULAR PATTERN AND SIDESTRIP NOZZLES IN SINGLE ROW COVERAGE, 6.5"/- PER HOUR; ROTOR HEADS IN SINGLE ROW COVERAGE, .50"/- PER HOUR. AT MEDIUM NARROW AREAS, 2.0"/- PER HOUR; MULTI-STREAM ROTOR HEADS, 1.0"/- PER HOUR.
- SPRAY HEADS WITH CIRCULAR PATTERN NOZZLES IN FULL COVERAGE AT TURF GRASS AREAS, 25 MINUTES PER NIGHT; SPRAY HEADS WITH CIRCULAR PATTERN NOZZLES IN FULL COVERAGE AT PLANTING AREAS, 18 MINUTES PER NIGHT; SPRAY HEADS WITH CIRCULAR PATTERN NOZZLES IN SINGLE ROW COVERAGE AT FLORIDA TURF GRASS AREAS, 40 MINUTES PER NIGHT; SPRAY HEADS WITH CIRCULAR PATTERN NOZZLES IN SINGLE ROW COVERAGE AT EXISTING TURF/WEED AREAS, 30 MINUTES PER NIGHT; SPRAY HEADS WITH CIRCULAR PATTERN NOZZLES IN SINGLE ROW COVERAGE AT PLANTING AREAS, 30 MINUTES PER NIGHT; ROTOR HEADS IN SINGLE ROW COVERAGE AT TURF GRASS AREAS, 45 MINUTES PER NIGHT; BUBBLERS FOR VINES AT GREEN SCREEN BUFFER AREAS, 10 MINUTES PER NIGHT; BUBBLERS AT TREES/PALMS, 20 MINUTES PER NIGHT.

### SLEEVES SCHEDULE

#	Length	Location**	Sheet	Existing / Proposed	Size	Type	Measured Length	Date Measured	Found	Utilized	USE	Notes
1	45'+/-	DR	IR-2	PR	4"	HDPE					4" IRRIGATION SUPPLY LINE	
2	60'+/-	DR	IR-2	PR	4"	HDPE					4" IRRIGATION SUPPLY LINE	
3	55'+/-	SM	IR-2	PR	6"	HDPE					2" SUBMAIN, LAT. & C. WIRE	
4	25'+/-	MM	IR-2	PR	6"	HDPE					2" SUBMAIN, LAT. & C. WIRE	
5	40'+/-	MS	IR-2	PR	3"	HDPE					CONTROLLER 1 WIRES	
6	300'+/-	DR	IR-2	PR	4"	HDPE					4" IRRIGATION SUPPLY LINE	INCREASED LENGTH DUE TO SITE PLAN CHANGES 12/2011
7	65'+/-	ST	IR-2	PR	4"	HDPE					4" IRRIGATION SUPPLY LINE	
8	60'+/-	DR	IR-3	PR	4"	HDPE					4" IRRIGATION SUPPLY LINE	
9	65'+/-	DR	IR-3	PR	4"	HDPE					4" IRRIGATION SUPPLY LINE	
10	60'+/-	DR	IR-3	PR	4"	HDPE					4" IRRIGATION SUPPLY LINE	
11	30'+/-	DR	IR-4	PR	4"	HDPE					4" IRRIGATION SUPPLY LINE	
12	255'+/-	DR	IR-4	PR	4"	HDPE					4" IRRIGATION SUPPLY LINE	
13	OMIT											
14	50'+/-	DR	IR-4	PR	4"	HDPE					4" IRRIGATION SUPPLY LINE	
15	40'+/-	DR	IR-4	PR	4"	HDPE					4" IRRIGATION SUPPLY LINE	
16	40'+/-	DR	IR-4	PR	4"	HDPE					4" IRRIGATION SUPPLY LINE	
17	40'+/-	DR	IR-4	PR	4"	HDPE					4" IRRIGATION SUPPLY LINE	
18	65'+/-	ST	IR-4&5	PR	4"	HDPE					4" IRRIGATION SUPPLY LINE	
19	60'+/-	ST	IR-5	PR	6"	HDPE					2" SUBMAIN, LAT. & C. WIRE	
20	50'+/-	DR	IR-5	PR	4"	HDPE					2" SUBMAIN & C. WIRE	PULL TOGETHER IN CONJUNCTION WITH 4" (#21)
21	50'+/-	DR	IR-5	PR	4"	HDPE					LATERAL LINE(S)	PULL TOGETHER IN CONJUNCTION WITH 4" (#20)
22	55'+/-	DR	IR-5	PR	3"	HDPE					ELECTRIC SERVICE	
23	50'+/-	ST	IR-5	PR	4"	HDPE					LATERAL LINE & C. WIRE	
24	50'+/-	ST	IR-5	PR	4"	HDPE					4" IRRIGATION SUPPLY LINE	

N = North; S = South; E = East; W = West; SM = Side to Median Crossing; MS = Median to Side Crossing; MM = Median to Median Crossing; ST = Street Crossing; DR = Driveway Crossing  
EX = Existing Sleeve; PR = Proposed Sleeve; \* Assumed existing PVC sleeve, submit an alternate bid for SDR 11 HDPE

## IRRIGATION PHASES BASE & ALTERNATE BIDS LIST

### PHASE 2 BASE BID - FOREST LAKES BOULEVARD/TURTLE LAKE GOLF ROW

- EXISTING IRRIGATION SYSTEMS REPAIR(S) AND MODIFICATION(S) NECESSARY DUE TO NEW SIDEWALK CONSTRUCTION: PROVIDE REPAIR(S) AND MODIFICATIONS TO EXISTING IRRIGATION SYSTEMS AFFECTED BY THE NEW SIDEWALK CONSTRUCTION ALONG FOREST LAKES BOULEVARD. REFER TO THE 250± SCHEMATIC SHOWN ON SHEET IR-3 FOR CONCEPT REFERENCE. IT SHALL BE THE IRRIGATION CONTRACTOR'S RESPONSIBILITY TO REVIEW EACH SITE AND PROVIDE REPAIRS/MODIFICATIONS THAT ARE REPRESENTATIVE OF THE SCHEMATIC GRAPHIC CONCEPT PRESENTED ON SHEET IR-3.

### PHASE 2 BID ALTERNATE 1 - FOREST LAKES BOULEVARD/TURTLE LAKE GOLF ROW

- IRRIGATION POINT OF CONNECTION TO PHASE 1A EXISTING SYSTEM; 4" CLASS 200 PVC IRRIGATION SERVICE LINE, 30"± DEPTH; 4" CLASS 150 SDR 11 EXTRAMOLECULAR STRENGTH HDPE CASING TO BE USED AS IRRIGATION SERVICE LINE UNDER PAVED SURFACES; 4" HDPE TO PVC MECHANICAL JOINT COUPLINGS WITH TRANSITIONAL GASKETS; WATERMAN AA-6, 2" PRESSURE RELIEF VALVES; WATERMAN AV-150, 1.5" AIR VACUUM RELIEF VALVES; IRRIGATION MAIN/SERVICE LINE PRESSURE CHECK POINTS; 4" IRRIGATION SERVICE LINE ISOLATION GATE VALVES. REFER TO CONSTRUCTION AND BID DOCUMENTS FOR CORRESPONDING INFORMATION.

### PHASE 2 BID ALTERNATE 2 - WOODSHIRE LANE ENTRY AREAS

- IRRIGATION POINT OF CONNECTION OF 4" SERVICE LINE TO 3" HYDROMETER, PROVIDE MJ REDUCING FITTING; BERMAID 3" HYDROMETER AS SPECIFIED; ELECTRIC SERVICE TO CONTROLLER AS SPECIFIED; HUNTER ICC-990-PP, ACC 99 STATION DECODER CONTROLLER WITH HUNTER ICC-18-PP, ACC 18 STATION DECODER CONTROL SYSTEMS; HUNTER ICC-400, 4 STATION DECODER; PAGE 12-2 MAXIWIRE, 12 GAUGE CONTROL WIRE FOR TWO-WIRE TECHNOLOGY DECODER CONTROL SYSTEMS; DIRECTIONAL BORE 19, 6" BORE; DIRECTIONAL BORES 20 & 21, 4" BORES; BORE 22, 3" BORE; BORE 23, 2" BORE; BORE 24, 3" BORE TO BE USED AS A 3" MAIN AT PAVED SURFACE CROSSING; 3" HDPE TO PVC MECHANICAL JOINT COUPLINGS WITH TRANSITION GASKETS; 3" CLASS 200 PVC MAIN LINE AT POINTS OF CONNECTION SHOWN PER PLAN; 4"x3"x3" MJ TEE AT EAST SIDE OF ROW POC; 2" IRRIGATION SUBMAIN ISOLATION VALVE; 2" CLASS 200 PVC IRRIGATION SUBMAIN; IRRIGATION MAIN/SUBMAIN PRESSURE CHECK POINT; HUNTER ICV SERIES 1" ZONE CONTROL VALVE AS SPECIFIED PER PLAN & BID DOCUMENTS; HUNTER PROS-12-R, PRO-SPRAY SERIES 12" HIGH POP-UP SPRAY HYDRANT WITH TORO PRECISION SERIES SPRAY NOZZLES; HUNTER PROS-6-R, PRO-SPRAY SERIES 6" HIGH POP-UP SPRAY HYDRANT WITH TORO PRECISION SERIES SPRAY NOZZLES; HUNTER PROS-SR, PRO-SPRAY SERIES SHRUB RISER SPRAY NOZZLE ADAPTER WITH RAINBIRD 1404 PRESSURE COMPENSATING UMBRELLA TYPE BUBBLER NOZZLE FOR TREES DESIGNATED FOR THIS ALTERNATE BID; CLASS 200 PVC LATERAL LINE PIPING FOR ZONE C2-8 FROM ZONE CONTROL VALVE TO TREES/PALMS DESIGNATED FOR THIS ALTERNATE BID, PROVIDE TEES WITH THREADED PLUGS AT OUTLETS DESIGNATED FOR TREES/PALMS TO BE INSTALLED AT OTHER ALTERNATE BIDS SERVICED BY THE INSTALLED PIPING SECTION; EXISTING IRRIGATION SYSTEM ADAPTER WITH RAINBIRD 1404 PRESSURE COMPENSATING UMBRELLA TYPE BUBBLER NOZZLE FOR TREES DESIGNATED FOR THIS ALTERNATE BID; CLASS 200 PVC LATERAL LINE PIPING FOR ZONE C2-8 FROM ZONE CONTROL VALVE TO TREES/PALMS DESIGNATED FOR THIS ALTERNATE BID, PROVIDE TEES WITH THREADED PLUGS AT OUTLETS DESIGNATED FOR TREES/PALMS TO BE INSTALLED AT OTHER ALTERNATE BIDS SERVICED BY THE INSTALLED PIPING SECTION; PROPOSED ZONES C2-1, C2-2 & C2-8 ELEMENTS SHOWN/DESIGNATED; EXISTING IRRIGATION SYSTEM ZONE CONTROL VALVES & HYDRANTS REMOVAL AND EXISTING MAIN LINE CAPPING AT THE AREAS AFFECTED BY THE PROPOSED ALTERNATE BID WORK. REFER TO CONSTRUCTION AND BID DOCUMENTS FOR CORRESPONDING INFORMATION.

### PHASE 2 BID ALTERNATE 3 - WOODSHIRE LANE RIGHT OF WAY AREAS

- HUNTER ICC-400, 4 STATION DECODER; PAGE 12-2 MAXIWIRE, 12 GAUGE CONTROL WIRE FOR TWO-WIRE TECHNOLOGY DECODER CONTROL SYSTEMS; SLEEVES 29 & 32, 4" SCH 40 PVC; 3" IRRIGATION MAIN ISOLATION VALVE; 3" CLASS 200 PVC IRRIGATION MAIN; HUNTER ICV SERIES 1" ZONE CONTROL VALVE AS SPECIFIED PER PLAN & BID DOCUMENTS; HUNTER I-20-6P-ADJ, I-20 SERIES 6" ROTOR HEADS; HUNTER PROS-12-R, PRO-SPRAY SERIES 12" HIGH POP-UP SPRAY HYDRANT WITH TORO PRECISION SERIES SPRAY NOZZLES; HUNTER PROS-6-R, PRO-SPRAY SERIES 6" HIGH POP-UP SPRAY HYDRANT WITH TORO PRECISION SERIES SPRAY NOZZLES; ADAPTER WITH RAINBIRD 1404 PRESSURE COMPENSATING UMBRELLA TYPE BUBBLER NOZZLE FOR TREES DESIGNATED FOR THIS ALTERNATE BID; PROPOSED ZONES C2-3, C2-4, C2-5, C2-6, C2-7, C2-8 (SECOND PART OF ZONE), C2-9, C2-10, C2-11 & C2-12; IRRIGATION SUBMAIN, IRRIGATION MAIN/SUBMAIN PRESSURE CHECK POINT; HUNTER PROS-SR, PRO-SPRAY SERIES SHRUB RISER SPRAY NOZZLE ADAPTER WITH TORO PRECISION SERIES SPRAY NOZZLES; HUNTER PROS-6-R, PRO-SPRAY SERIES 6" HIGH POP-UP SPRAY HYDRANT WITH TORO PRECISION SERIES SPRAY NOZZLES; SERIES 6" HIGH POP-UP SPRAY HYDRANT WITH TORO PRECISION SERIES SPRAY NOZZLES; EXISTING IRRIGATION SYSTEM ZONE CONTROL VALVES & HYDRANTS REMOVAL AND EXISTING MAIN LINE CAPPING AT THE AREAS AFFECTED BY THE PROPOSED ALTERNATE BID WORK. REFER TO CONSTRUCTION AND BID DOCUMENTS FOR CORRESPONDING INFORMATION.

### PHASE 3 BID ALTERNATE 5 - WEST ENTRY ROW PROPOSED TURN LANE & SIDEWALK

- PROVIDE PROPOSED POINT OF CONNECTION AT EXISTING ZONE CONTROL VALVES MANIFOLD; CONNECT PROPOSED ZONE CONTROL VALVE WIRE (AWG 14 GAUGE) TO EXISTING CONTROLLER; HUNTER ICV SERIES 1.5" ZONE CONTROL VALVE AS SPECIFIED PER PLAN & BID DOCUMENTS; PROVIDE PROPOSED DIRECTIONAL BORES AND SLEEVES: 58 - 2" SCH 40 PVC SLEEVE, 5C - 2" HDPE DIRECTIONAL BORE, 5D - 3" HDPE DIRECTIONAL BORE, 5E - 3" HDPE DIRECTIONAL BORE, 5F - 2" SCH 40 PVC SLEEVE; REMOVAL/RELOCATE 12± EXISTING 6" POP-UP SPRAY HEADS TO DESIGNATED LOCATIONS (REFER TO PLAN); HUNTER PROS-06-R, PRO-SPRAY SERIES 6" POP-UP SPRAY HYDRANT WITH TORO PRECISION SERIES SPRAY NOZZLES; HUNTER PROS-SR, PRO-SPRAY SERIES SHRUB RISER SPRAY NOZZLE ADAPTER WITH TORO PRECISION SERIES SPRAY NOZZLES MOUNTED ON 60/11/2" SCH 80 PVC RISER; MODIFICATIONS TO EXISTING SYSTEM TO INCORPORATE PROPOSED SYSTEM ELEMENTS; RESTORE EXISTING LANDSCAPE DISTURBED BY PROPOSED IRRIGATION SYSTEM IMPROVEMENTS & ADDITIONS. REFER TO CONSTRUCTION AND BID DOCUMENTS FOR CORRESPONDING INFORMATION.

## IRRIGATION SYSTEM SEASONAL WATER BUDGETING FEATURE ADJUSTING TABLE

JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER
48%	57%	84%	94%	100%	96%	91%	88%	74%	67%	52%	48%

THE SEASONAL ADJUSTMENTS SCHEDULING TABLE SHOWN ABOVE IS BASED ON HISTORICAL ETc RATES. IT ASSUMES THAT SYSTEM WILL HAVE ADEQUATE MAINTENANCE WITH NO ALTERATIONS TO THE ZONES DESIGNED BY JA C. AND THAT PLANT MATERIAL SELECTION WILL BE AS SPECIFIED BY WINDHAM STUDIO, Inc.

Woodshire Lane Existing Irrigation Systems Field Modifications Note:  
There are existing irrigation systems that are installed along the east side of the Wood Shire Lane Right of Way. The existing systems provide irrigation along part of the Right of Way and also for common areas adjacent to some of the nearby buildings. At the time of design there were no record drawings and/or other reliable data that showed the layout of those systems. The Irrigation Contractor shall provide an Alternate Bid with an allowance to repair and/or replace existing irrigation equipment that provides irrigation at areas outside of the proposed landscape improvement areas in the event that the existing equipment becomes damaged as a result of the proposed site improvements, landscape and irrigation system installation. The Irrigation Contractor shall coordinate with the maintenance contractor to record the known location of equipment prior to commencing construction.

## IRRIGATION LEGEND

SYMBOL	DESCRIPTION	EST. QTY.
	Irrigation system source: Proposed 2" Irrigation efficient water meter by the City of Naples effluent water service. Capacity Requirements: 1- 125± GPM & 60± PSI.	1+/-
	Phase II (Woodshire Lane System) Irrigation Master Valve/Flow Meter, Bermad IR-3-910P-PRV, 3" Hydrometer valve with electric solenoid and pressure reducing pilot, with 3" flanged connections. Connect to controller to function as a master valve. Set pressure regulator/reducing pilot to 60± PSI. Install within a polymer concrete valve box. Include all materials and labor necessary for installation.	1+/-
	Electric service wire in 1.25" SCH 80 PVC conduit from power pole to controller C2 location. Provide all hardware, labor and service necessary.	REFER TO BID SCHEDULE
	Irrigation Controller C1: Hunter ACC-18-PP, ACC Series 18 station controller for multiple wire control technology, with plastic cabinet and pedestal. Provide electric service from adjacent power pole. Refer to plan for controller and power pole location.	NOT APPLICABLE
	Irrigation Controller C2: Hunter ACC-990-PP, ACC Series Two-Wire Decoder Controller with capacity for up to 99 stations. Plastic cabinet and pedestal. Provide electric service from adjacent power pole. Refer to plan for controller and power pole location.	1
	Irrigation Controller C2 6 Station Decoder: Hunter ICC-600, ACC Series 6 station decoder with surge suppression and ground wire. Provide connectors and connection method(s) in accordance to the latest manufacturer specifications.	REFER TO BID SCHEDULE
	Irrigation Controller C2 4 Station Decoder: Hunter ICC-400, ACC Series 4 station decoder with surge suppression and ground wire. Provide connectors and connection method(s) in accordance to the latest manufacturer specifications.	REFER TO BID SCHEDULE
	Irrigation Controller C2 2 Station Decoder: Hunter ICC-200, ACC Series 2 station decoder with surge suppression and ground wire. Provide connectors and connection method(s) in accordance to the latest manufacturer specifications.	REFER TO BID SCHEDULE
NO SYMBOL	Paige P70720-REV11, Maxi-Wire 12-2, 12 Gauge Special irrigation control wire for Two-Wire control technology. Provide connectors and gauge elements needed to function in accordance to manufacturer specifications.	REFER TO BID SCHEDULE
NO SYMBOL	Connections and materials necessary for controllers installation and operation. General Contractor to provide dedicated single and/or 3 phase power as required in conduit to electrical equipment location(s), and provide direct wiring by electrical contractor.	REFER TO BID SCHEDULE
	Hunter MWS-FR, Mini-Weather station with freeze sensors, mounted on a 15' long x 1-1/4" diameter SCH 80 PVC pole.	REFER TO BID SCHEDULE
	6" HDPE-Class 150 SDR11 Extra molecular weight HDPE Irrigation sleeves, installed using directional boring procedures.	REFER TO BID SCHEDULE
	4" HDPE-Class 150 SDR11 Extra molecular weight HDPE Irrigation sleeves, installed using directional boring procedures.	REFER TO BID SCHEDULE
	3" HDPE-Class 150 SDR11 Extra molecular weight HDPE Irrigation sleeves, installed using directional boring procedures.	REFER TO BID SCHEDULE
	4" HDPE-Class 150 SDR11 Extra molecular weight HDPE Irrigation supply line. Connect to PVC sections with HDPE to PVC Transitional gasket interconnecting fittings.	REFER TO BID SCHEDULE
	3" HDPE-Class 150 SDR11 Extra molecular weight HDPE Irrigation main line. Connect to PVC sections with HDPE to PVC Transitional gasket interconnecting fittings.	REFER TO BID SCHEDULE
	4" HDPE to PVC Mechanical joint coupling with transitional gasket interconnecting fittings.	REFER TO BID SCHEDULE
	3" HDPE to PVC Mechanical joint coupling with transitional gasket interconnecting fittings.	REFER TO BID SCHEDULE
	Ductile Iron Pipe 4"x3"x3" tee with Megalug MJ connections. Provide 3"x2" reducer. Thrust block.	REFER TO BID SCHEDULE
	4" PVC 1120-1220 Class 200 gasketed irrigation main line with Harco DIP fittings. Pantone Purple 522C.	REFER TO BID SCHEDULE
	3" PVC 1120-1220 Class 200 gasketed irrigation main line with Harco DIP fittings. Pantone Purple 522C.	REFER TO BID SCHEDULE
	3" PVC 1120-1220 Class 200 gasketed irrigation main line with Harco DIP fittings. Pantone Purple 522C.	REFER TO BID SCHEDULE
	1120-1220, Class 200 PVC Lateral line pipe. Pantone Purple 522C. Refer to plan for sizes.	TBD
	Irrigation Main line blow off: 3" & 1-1/4" D.I.P. & SCH 80 Piping & Fittings, 3" & 1-1/4" manual gate valve, valve boxes & other elements as per detail.	3+/-
	Irrigation main line pressure check point, refer to detail for elements description, and assembly illustration.	REFER TO BID SCHEDULE
	Waterman AA-6, 2" Pressure relief valve. Include Jumbo valve box; isolation valve; Corrugated plastic sleeve; Discharge gravel sump with valve box, filter fabric, discharge piping and interconnecting fittings.	REFER TO BID SCHEDULE
	Waterman AV-150, 1.5" Air vacuum release valve. Include Jumbo valve box & extensions; isolation valve; Corrugated plastic sleeve; Discharge gravel sump with valve box, filter fabric, discharge piping and interconnecting fittings.	REFER TO BID SCHEDULE
	Nbco M619-RW-S0N, 619 Series 4" epoxy coated isolation gate valve with non-rising stem, flanged.	REFER TO BID SCHEDULE
	Nbco M619-RW-S0N, 619 Series 3" epoxy coated isolation gate valve with non-rising stem, flanged.	REFER TO BID SCHEDULE
	Matco 514-200, 514 Series 2" brass isolation gate valve.	REFER TO BID SCHEDULE
	Hunter ICV-100-FS, ICV Series 1" Electric Solenoid Valve with Filter Sentry feature. Include DBR wire connectors; Yellow identification and purple warning plastic tags, manufactured by Christie Industries; Filter fabric and gravel. Install within a Jumbo valve box, 2 valves per box.	REFER TO BID SCHEDULE
	Hunter I-20-12P-ADJ, I-20 Series 12" high pop-up rotary gear head. Refer to plan for model, nozzle size, and coverage pattern.	REFER TO BID SCHEDULE
	Hunter I-20-6P-ADJ, I-20 Series 6" pop-up rotary gear head. Refer to plan for model, nozzle size, and coverage pattern.	REFER TO BID SCHEDULE
	Hunter PROS-12P-XX, Hunter Pro-Spray Series 12" High Pop-up spray head body with Toro Precision series nozzles, as specified per plan. Refer to plan for patterns & nozzle size/range.	REFER TO BID SCHEDULE
	Hunter PROS-6P-XX, Hunter Pro-Spray Series 6" Pop-up spray head body with Toro Precision series nozzles, as specified per plan. Refer to plan for patterns & nozzle size/range.	REFER TO BID SCHEDULE
	Hunter Pro-Spray Series 12" High Pop-up spray head body with Toro Precision series 4X30 Sidestrip nozzle, as specified per plan.	REFER TO BID SCHEDULE
	Hunter Pro-Spray Series 6" Pop-up spray head body with Toro Precision series 4X30 Sidestrip nozzle, as specified per plan.	REFER TO BID SCHEDULE
	Hunter PROS-4P-XX, Hunter Pro-Spray Series 4" Pop-up spray head body with RainBird 1400 series 1402, .5 GPM pressure compensating flood type bubbler nozzle. One unit per vine plant at Green Screen buffers.	NOT APPLICABLE
	Hunter PROS-SR-XX, Hunter Pro-Spray Series shrub riser spray nozzle adapter with RainBird 1400 series 1404, 1 GPM Flood type, pressure compensating bubbler nozzle, 1 Bubbler per designated tree/palm. Refer to plan for tree & palm locations. Connect bubbler units to Class 200 PVC 1-1/4" Bubbler Zone (BZ) lateral line.	REFER TO BID SCHEDULE
TBD	To be determined by contractor prior to submitting bid(s).	
	System # - Designated Valve Number.	
	Valve size	
	Estimated Flow demand	
	Hydrant Primary Application	
	Estimated Application Rate	
	Sleeve/casing designated number	
	Sleeve/casing specified size/diameter	
	Sleeve/casing estimated length	

Spray Nozzle Selection/Specification Note:  
The Toro Precision series spray nozzles with male threads for Hunter or RainBird spray hydrants has been specified due to the lower flow gellonage and better dirty water clogging resistance that is provided by the nozzles series. Unapproved spray hydrant manufacturer & series substitution will be rejected. All rejected units shall be removed and replaced with specified or approved units at the violating installer's/provider's expense.

**FOREST LAKES MSTU**  
**BOND PROJECT F-58**  
 COLLIER COUNTY, FLORIDA  
 PREPARED FOR: COLLIER COUNTY D.O.T.

JOB #: 034-09

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IRRIGATION DETAILS

SHEET NUMBER:  
**IR-8**

Date: 11-02-11  
 Revision Date: 11-24-11, 12-13-11, 06-05-12  
 Revision Date: 07-18-12 (Phase 2, 08/04/12) (Revised Bid Submittal)  
 Revision Date: 04-02-2012 (Rev. 2, Revised Bid Submittal)