PORT ST. LUCIE UTILITY SYSTEMS DEPARTMENT NOTES

1. NO LANDSCAPING SHALL BE PLANTED IN A MANNER THAT WOULD ADVERSELY AFFECT UTILITY EASEMENTS. LANDSCAPING SHALL BE IN COMPLIANCE WITH CHAPTER 154 OF THE CITY OF PORT ST. LUCIE CODE OF ORDINANCES, PSLUSD TECHNICAL SPECIFICATIONS AND POLICIES.
2. ALL LANDSCAPING WITHIN CITY UTILITY EASEMENTS SHALL COMPLY WITH PSLUSD TECHNICAL SPECIFICATIONS, POLICIES, AND CODES.
3. ALL LANDSCAPING SHALL MEET THE LATEST PSLUSD LANDSCAPE POLICY AND SHALL NOT BE PLACED IN A MANNER THAT WOULD CREATE CONFLICTS WITH THE INTENDED OPERATION AND MAINTENANCE OF ANY EXISTING UTILITY.
4. TREES SHALL NOT BE PLANTED WITHIN (10) FEET OF ANY PSLUSD UNDERGROUND INFRASTRUCTURE.
5. NO LANDSCAPING OTHER THAN SOD GRASSES SHALL BE LOCATED WITHIN 5' OF A PSLUSD APPURTENANCE SUCH AS A WATER METER ASSEMBLY, BACKFLOW DEVICE, FIRE HYDRANT OR SEWER CLEANOUT, ETC.

L2 - LANDSCAPE

L3 - LANDSCAPE

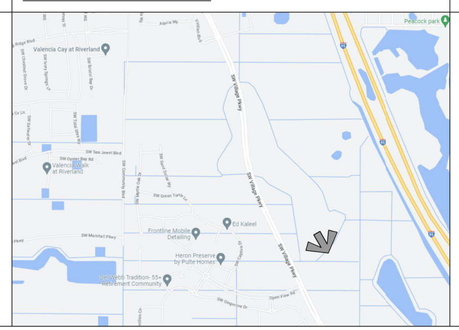
0 50 100 200

SCALE: 1" = 50'

NORTH

TABLE OF CONTENTS:

LOCATION MAP:



SITE DATA

HARDINESS ZONE:	10A
MEAN ANNUAL PRECIPITATION:	46" - 58"
MEAN ANNUAL AIR TEMP:	68° - 77°
FROST FREE PERIOD:	350 - 365 DAYS
SOIL TYPE:	RIVIERA AND SIM.
LANDFORM:	DEPRESSIONS ON MARINE TERRACES
SOIL PROFILE:	0"-22" SAND 22"-80" SANDY LOAM
SLOPE:	0% - 1%
DEPTH TO RESTRICTIVE FEATURE:	MORE THAN 80"
DRAINAGE CLASS:	VERY POORLY DRAINING
RUNOFF CLASS:	NEGLIGIBLE
DEPTH TO WATER TABLE:	ABOUT 0"
FREQUENCY FOR FLOODING:	NONE
HYDROLOGIC SOIL GROUP:	C/D

GROUP C: SOILS ARE SANDY CLAY LOAM, THEY HAVE LOW INFILTRATION RATES WHEN THOROUGHLY WETTED AND CONSIST CHIEFLY OF SOILS WITH A LAYER THAT IMPEDES DOWNWARD MOVEMENT OF WATER AND SOILS WITH MODERATELY FINE TO FINE STRUCTURE.

GROUP D: SOILS ARE CLAY LOAM, SILTY CLAY LOAM, SANDY CLAY, SILTY CLAY OR CLAY. THIS HSG HAS THE HIGHEST RUNOFF POTENTIAL. THEY HAVE VERY LOW INFILTRATION RATES WHEN THOROUGHLY WETTED AND CONSIST CHIEFLY OF CLAY SOILS WITH A HIGH SWELLING POTENTIAL. SOILS WITH A PERMANENT HIGH WATER TABLE. SOILS WITH A CLAYPAN OR CLAY LAYER AT OR NEAR THE SURFACE AND SHALLOW SOILS OVER NEARLY IMPERVIOUS MATERIAL.

HYDRIC SOIL RATING:	YES

100% PLANS

P24-010

Michael Flaugh
LANDSCAPE ARCHITECT
FL Reg #LA0001728
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Stuart
Houzz.com/pro/MichaelFlaugh www.MikeFlaughLA.com

Sheet
L1
Title Sheet

Landscape Plan
MARSHALL BLVD. EXTENSION
Port St. Lucie, FL

Please note: This landscape plan is a professional interpretation of existing and proposed site elements based on multiple sources of information. These sources may include: property surveys, architectural plans, google earth imagery, site observations, photographs and site plans. At times, these supporting documents are inaccurate or approximate or past land survey adjustments to the design during installation are necessary. ***It is the contractors responsibility to verify all measurements and quantities prior to commencing work.***

Michael Flaugh
Digitally signed by Michael Flaugh
Date: 2024.04.29 13:05:53 -04'00'

REGISTERED LANDSCAPE ARCHITECT MICHAEL FLAUGH LA 1728 STATE OF FLORIDA

Date: 01/12/2024
Design by: PA, MF
Reviewed by: MF
Revised: 05/01/2024
100% PLANS:

PORT ST. LUCIE UTILITY SYSTEMS DEPARTMENT NOTES

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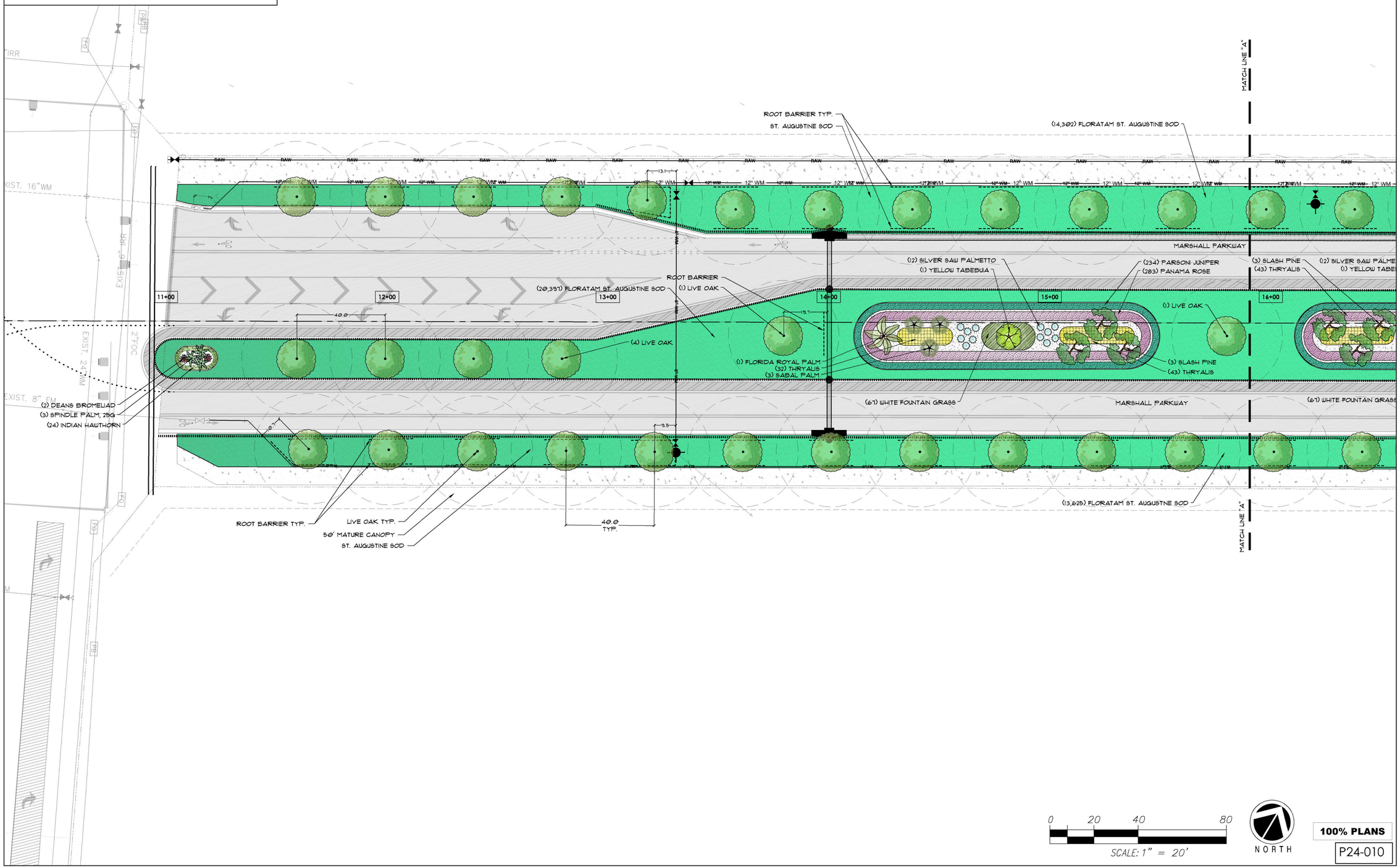

100% PLANS

P24-010

Michael Flaugh LANDSCAPE ARCHITECT
FL Reg. #LA0001728
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Stuart
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Sheet L2
Planting Plan

Landscape Plan
MARSHALL BLVD. EXTENSION
Port St. Lucie, FL

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Michael Flaugh
Digitally signed by Michael Flaugh
Date: 2024.04.29 13:06:17 -04'00'

REGISTERED LANDSCAPE ARCHITECT MICHAEL FLAUGH LA 0001728 STATE OF FLORIDA

Date: 01/12/2024
Design by: PA, MF
Reviewed by: MF
Revised:
100% PLANS 05/01/2024

PORT ST. LUCIE UTILITY SYSTEMS DEPARTMENT NOTES

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0 20 40 80

SCALE: 1" = 20'

NORTH

MATCH LINE "A"

(14,302) FLORATAM ST. AUGUSTINE SOD

LIVE OAK TYP.
50' MATURE CANOPY

ROOT BARRIER TYP.

(64) COCOPLUM

(2,860) FLORATAM ST. AUGUSTINE SOD

MARSHALL PARKWAY

(234) PARSONI JUNIPER
(283) PANAMA ROSE

(3) SLASH PINE
(43) THRYALIS

(12) SILVER SAW PALMETTO
(1) YELLOW TABEBUIA

(253) PARSONI JUNIPER
(308) PANAMA ROSE

15+00 16+00 17+00 18+00 19+00 20+00 21+00

(1) LIVE OAK

(3) SLASH PINE
(43) THRYALIS

(67) WHITE FOUNTAIN GRASS

(1) FLORIDA ROYAL PALM
(32) THRYALIS
(3) SABAL PALM

ROOT BARRIER
(2) LIVE OAK

(64) INDIAN HAWTHORN
(4) DEANS BROMELIAD
(4) SPINDLE PALM, 25G

MARSHALL PARKWAY

(13,625) FLORATAM ST. AUGUSTINE SOD

MATCH LINE "A"

40.0 TYP.

ROOT BARRIER TYP.
ST. AUGUSTINE SOD

100% PLANS

P24-010

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Sheet
L3
Planting Plan

Landscape Plan
MARSHALL BLVD. EXTENSION
Port St. Lucie, FL

Michael Flaugh
Digitally signed by Michael Flaugh
Date: 2024.04.29 13:06:32 -04'00'

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REGISTERED LANDSCAPE ARCHITECT
MICHAEL FLAUGH
LA 0001728
STATE OF FLORIDA

Date: 01/12/2024
Design by: PA, MF
Reviewed by: MF
Revised:
100% PLANS 05/01/2024

PLANT SCHEDULE OVERALL

SYMBOL	QTY	BOTANICAL NAME	COMMON NAME	CONT	CAL	SIZE	NOTES
TREES							
	6	PINUS ELLIOTTI	SLASH PINE	B & B	2.5"CAL	12` OA HT., 5` SPRD.	
	49	QUERCUS VIRGINIANA	LIVE OAK	100 GAL	3.5"CAL	16` OA HT., 8` SPRD.	FULL CANOPY, 5` C.T. MIN.
	2	TABEBUIA CHRYSOTRICHA	YELLOW TABEBUIA	45 GAL	2.5"CAL	12` OA HT., 5` SPRD.	
PALMS							
	7	HYOPHORBE VERSCHAFFELTII	SPINDLE PALM, 25G	25 GAL		7 - 8` HT.	
	2	ROYSTONEA ELATA	FLORIDA ROYAL PALM	B & B		12` GW	
	6	SABAL PALMETTO	SABAL PALM	B & B	SLICK	10` CT	

SYMBOL	QTY	BOTANICAL NAME	COMMON NAME	CONT	SPACING	SIZE	NOTES
SHRUBS							
	6	AECHMEA X `DEAN`	DEANS BROMELIAD	7 GAL	AS SHOWN	4` HT., FULL	
	64	CHRYSOBALANUS ICACO `RED-TIP`	COCOPLUM	3 GAL	24" OC	24" HT., FULL	NATIVE
	24	SERENOA REPENS `CINEREA`	SILVER SAW PALMETTO	7 GAL	36" O.C.	24" HT., FULL	
SHRUB AREAS							
	150	GALPHIMIA GLAUCA	THRYALIS	3 GAL	30" O.C.	24" HT., FULL	
	487	JUNIPERUS CHINENSIS `PARSONII`	PARSONI JUNIPER	3 GAL	24" O.C.	12" X 12"	
	88	RHAPHIOLEPIS INDICA	INDIAN HAWTHORN	3 GAL	24" O.C.	10" X 12"	
	591	RONDELETIA LEUCOPHYLLA	PANAMA ROSE	3 GAL	24" O.C.	24" HT., FULL	

SYMBOL	QTY	BOTANICAL NAME	COMMON NAME	CONT	INSTALL	SPECS	NOTES
GROUND COVERS							
	134	PENNISETUM SETACEUM `WHITE`	WHITE FOUNTAIN GRASS	1 GAL	24" OC	24" X 20"	
	30,787	STENOTAPHRUM SECUNDATUM `FLORATAM`	FLORATAM ST. AUGUSTINE SOD	SOD			
	19,914	STENOTAPHRUM SECUNDATUM `FLORATAM`	FLORATAM ST. AUGUSTINE SOD	SOD	12" OC		

PLANT SCHEDULE PERIMETER

SYMBOL	QTY	BOTANICAL NAME	COMMON NAME	CONT	CAL	SIZE	NOTES
TREES							
	41	QUERCUS VIRGINIANA	LIVE OAK	100 GAL	3.5"CAL	16` OA HT., 8` SPRD.	FULL CANOPY, 5` C.T. MIN.

SYMBOL	QTY	BOTANICAL NAME	COMMON NAME	CONT	SPACING	SIZE	NOTES
SHRUBS							
	64	CHRYSOBALANUS ICACO `RED-TIP`	COCOPLUM	3 GAL	24" OC	24" HT., FULL	NATIVE

SYMBOL	QTY	BOTANICAL NAME	COMMON NAME	CONT	INSTALL	SPECS	NOTES
GROUND COVERS							
	30,787	STENOTAPHRUM SECUNDATUM `FLORATAM`	FLORATAM ST. AUGUSTINE SOD	SOD			

TREE CALCULATIONS
STREET LENGTH (SOUTH SIDE WITH PLANTING AREA) : 894 LN/FT
STREET LENGTH (NORTH SIDE WITH PLANTING AREA) : 894 LN/FT
1,921.29 / 50 = 18 TREES ON EACH SIDE OF THE STREET
TOTAL TREES REQUIRED: 36
TOTAL TREES PROVIDED: 41


RED TIP COCOPLUM


PARSON'S JUNIPER


INDIAN HAWTHORNE

PLANT SCHEDULE MEDIAN

SYMBOL	QTY	BOTANICAL NAME	COMMON NAME	CONT	CAL	SIZE	NOTES
TREES							
	6	PINUS ELLIOTTI	SLASH PINE	B & B	2.5"CAL	12` OA HT., 5` SPRD.	
	8	QUERCUS VIRGINIANA	LIVE OAK	100 GAL	3.5"CAL	16` OA HT., 8` SPRD.	FULL CANOPY, 5` C.T. MIN.
	2	TABEBUIA CHRYSOTRICHA	YELLOW TABEBUIA	45 GAL	2.5"CAL	12` OA HT., 5` SPRD.	
PALMS							
	7	HYOPHORBE VERSCHAFFELTII	SPINDLE PALM, 25G	25 GAL		7 - 8` HT.	
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SHRUB AREAS							
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SYMBOL	QTY	BOTANICAL NAME	COMMON NAME	CONT	INSTALL	SPECS	NOTES
GROUND COVERS							
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	19,914	STENOTAPHRUM SECUNDATUM `FLORATAM`	FLORATAM ST. AUGUSTINE SOD	SOD	12" OC		

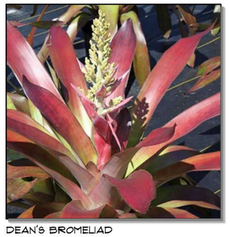

SLASH PINE


LIVE OAK


YELLOW TABEBUIA


SPINDLE PALM


SABAL PALM


DEAN'S BROMELIAD


SILVER SAW PALMETTO


THRYALLIS


PANAMA ROSE


WHITE FOUNTAIN GRASS


ST AUGUSTINE FLORATAM SOD


ROYAL PALM

100% PLANS

P24-010

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Sheet
L4
Planting Plan
Plant Schedules

Landscape Plan
MARSHALL BLVD. EXTENSION
Port St. Lucie, FL

Michael Flaugh
Digitally signed by Michael Flaugh
Date: 2024.04.29 13:06:53 -04'00'

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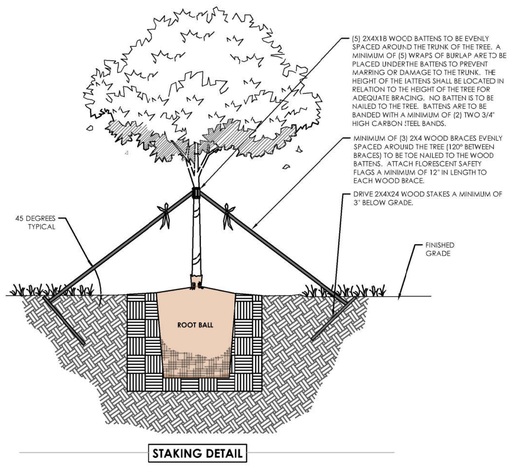
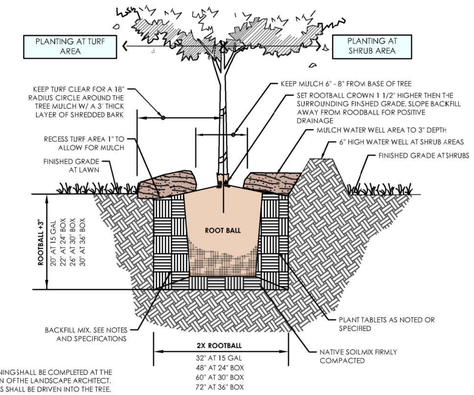
REGISTERED LANDSCAPE ARCHITECT MICHAEL FLAUGH LA 0001728 STATE OF FLORIDA

Date: 01/12/2024
Design by: PA, MF
Reviewed by: MF
Revised:
100% PLANS: 05/01/2024



STAKING DETAIL

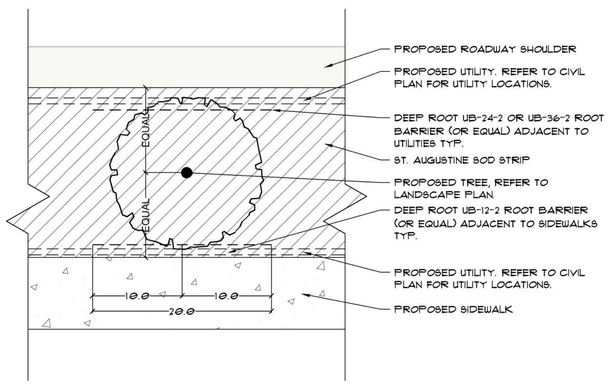


NOTES:
-ALL PRUNING SHALL BE COMPLETED AT THE DIRECTION OF THE LANDSCAPE ARCHITECT.
- NO NAILS SHALL BE DRIVEN INTO THE TREE.

PLANT PIT DETAIL

1 TREE PLANTING DETAIL

NOT TO SCALE



TREE PLACEMENT
-CENTER THE NEW TREES IN THE SOD AREA PER THE DETAIL ABOVE

ROOT BARRIER REQUIREMENTS (DEEPROOT OR EQUAL)

ADJACENT TO UTILITIES 8" IN DIAMETER OR SMALLER:	DEEPROOT UB-24-2
ADJACENT TO UTILITIES GREATER THAN 9" IN DIAMETER:	DEEPROOT UB-36-2
ADJACENT TO SIDEWALKS:	DEEPROOT UB-12-2

INSTALL "DEEPROOT" ROOT BARRIERS PER THE MANUFACTURER'S SPECIFICATIONS

2 ROOT BARRIER DETAIL

1/8" = 1'-0"

PORT ST. LUCIE UTILITY SYSTEMS DEPARTMENT NOTES

1. No landscaping shall be planted in a manner that would adversely affect utility easements. Landscaping shall be in compliance with Chapter 154 of the City of Port St. Lucie Code of Ordinances, PSLUSD technical specifications and policies.
2. All landscaping within City utility easements shall comply with PSLUSD technical specifications, policies, and codes.
3. All landscaping shall meet the latest PSLUSD Landscape Policy and shall not be placed in a manner that would create conflicts with the intended operation and maintenance of any existing utility.
4. Trees shall not be planted within (10) feet of any PSLUSD underground infrastructure.
5. No landscaping other than sod grasses shall be located within 5' of a PSLUSD appurtenance such as a water meter assembly, backflow device, fire hydrant or sewer cleanout, etc.

GENERAL NOTES

1. No plant substitutions can be made without the City of Port S. Lucie's approval.
2. All required landscape improvements must be inspected and approved by the City of Port St. Lucie prior to the issuance of a Certificate of Occupany.
3. Any existing landscaping, sod, or irrigation damaged or destroyed during the construction shall be replaced prior to the final inspection.
4. All prohibited, exotic and invasive species shall be removed from the entire site prior to issuance of a Certificate of Occupancy.
5. Planting adjacent to fire hydrants is to have a minimum clear radius of 7.5' as required by the NFPA Uniform Fire Code Florida Edition 18.3.4.1 Hydrants. All fire hydrants and fire check valves shall have a minimum of 7.5' from the front and sides with 4' from the rear to all landscape material per the Florida Fire Prevention Code.
6. Tree locations shown on these plans are approximate. Final tree locations may be adjusted to accommodate unforeseen field conditions, to comply with safety regulations and setbacks, avoid utilities or as otherwise directed or approved by the Landscape Architect. The Contractor shall flag all tree locations for approval from the Landscape Architect prior to planting.
7. Above and below ground utilities shall be verified by the Contractor prior to commencement of work in the project area. If any utility conflicts are discovered they shall be brought to the attention of the Landscape Architect immediately in writing; the Landscape Architect will coordinate the necessary adjustments. In the event of utility conflicts, the landscaping will be adjusted and not the utility.
8. Notify Owner and have all utilities located and marked through Sunshine 811 (800-432-4770) three (3) full days in advance of beginning construction on project site.

LANDSCAPE SPEFIFICATIONS

1. All specifications must be satisfied. If there is a problem locating a material with given specifications, the contractor shall contact the landscape architect by email prior to installation. At the discretion of the landscape architect, a substitution may be made.
2. Landscape contractor is responsible to review and reconcile plan with landscape materials list, and analyze site conditions and access prior to submitting a proposal.
3. The landscape contractor shall comply with all local and State laws, codes and ordinances.
4. All plant material furnished by the landscape contractor shall be Florida #1 or better (Grades and Standards for Nursery Plants, Florida Department of Agriculture and Consumer Services, Latest Edition), unless otherwise noted on the landscape materials list. As many species tolerate both sunny and shady growing conditions, The landscape contractor is responsible for acquiring all plant material grown in similar conditions to the site.
5. The landscape contractor shall complete all work according to the Florida Green Industries Best Management Practices.
6. The landscape contractor is responsible for locating all underground utilities prior to commencing work.
7. All planting areas shall be prepared by removing all debris, including asphalt, concrete, or similar materials not suited for landscape planting.
8. Planting soil shall be clean of rocks, sticks, roots and weeds, and shall be well-draining.
9. All landscaped areas shall be finish graded such that finished elevation will be flush and level with surrounding paved surfaces. The finished grade after planting and mulching shall not impede the flow of drainage into landscaped areas and to prevent the backwash of mulch and debris into paved areas.
10. All planting beds must drain sufficiently prior to planting. If existing soil is not adequate for establishment of plant materials due to poor drainage or chemical properties, soil amendments shall be added prior to planting.
11. Plants shall not be placed too close to one another or any hardscapes. See landscape materials list and planting details for spacing and placement of all plants.
12. All new landscape plants shall be planted slightly higher than the existing grade leaving top of the root ball exposed.
13. All plant materials shall be thoroughly watered in at the time of planting.
14. Mulch shall be laid in all landscape beds. No mulch shall be laid near tree trunks. Mulch planting areas with 3" layer of Melaleuca, Eucalyptus, or Enviromulch. Cypress Mulch is NOT ACCEPTABLE. Planting beds to receive mulch throughout the entire bed area.
15. Planting plan takes precedence over plant list.
16. Project Warranty: All plant material shall be warranted for a period of one (1) year after the date of substantial completion against defects, including death and unsatisfactory growth, except for defects resulting from abuse or damage by others or unusual phenomena or incidents which are beyond the contractor's control.
17. Any and all conditions which the contractor feels will be detrimental to the success of the planting shall be brought to the owner and Landscape Architect's attention.
18. Planting trees: Excavate hole per planting detail. When plant is set, place additional backfill consisting of a 50% mixture of Peat humus and natural soil around the base and sides of ball, and work each layer to settle backfill and eliminate voids and air pockets. When excavation is approximately 2/3 full, water thoroughly before placing remainder of backfill. Water again after placing final layer of backfill and before installing mulch.
19. Guy and stake trees in 3 directions with wood bracing and wooden stake anchors as shown in the details immediately after planting. (See detail)
20. Trees shall be fertilized with a complete natural organic fertilizer with a ratio of approximately 3:0:2 or 3:0:3 (e.g. one labeled 12-0-8). Similar analysis such as 16-0-8 (4:0:2) can also be used. Fertilizers that are slow release, controlled release, sulphur coated or with nitrogen as IBDU or ureaformaldehyde have extended release period. Thirty to fifty percent of the nitrogen should be water insoluble for slow release.

Agriform 20-0-5 twnety-one gram planting tablets may be substituted for granular fertilizer. If utilized, the following rates shall be utilized: Position plant in hole. Backfill halfway up the rootball. Place tablet(s) beside rootball about 1" from root tips. Do not place tablets in bottom of hole.
25 Gallon and B&B trees: 2 per 1" caliper

21. Maintain trees by watering, cultivating, and weeding as required for healthy growth. Restore planting saucers and mulch. Tighten and repair stake and guying and reset trees to proper grade or vertical positions as required. Spray as necessary to keep trees free of insects and disease. The contractor shall begin maintenance immediately after planting and shall continue maintenance through final acceptance when Certificate of Occupancy is issued to the General Contractor by City and project is released by the General Contractor to Client.
22. Prune trees only to remove damaged branches as directed by the Landscape Architect.
23. Planting Lawns: Provide clean, strongly rooted, uniformly sized strips of sod, machine stripped not more than 24 hours prior to laying. Grade and roll prepared lawn surface. Water thoroughly but not to create muddy soil conditions. Lay sod strips with tight joints, roll or tamp lightly, and water thoroughly.
24. Maintain positive drainage, no planting is to block drainage.
25. Drainage Testing
    Prior to planting of trees each planting pit shall be tested in the following manner to verify adequate drainage.
    A) Dig each planting pit to the minimum specified size.
    B) Fill the planting pit with (12") twelve inches of water. If the water level in the planting pit drops (4") four or more inches within (4) four hours, the drainage is sufficient and a drainage channel is not required. If the water level drops less than (4") four inches with the (4) four hour period, then a channel is required.
    C) When a drainage channel is required, the drainage channel must extend down through the non porous soil and into porous soil. (See drainage testing detail)
    D) Discard all material removed from the drainage channel.
    E) When backfilling the planting pit, add course gravel to the drainage channel. Also, care must be taken to keep the consistency of the soil mix the same throughout the planting pit.

Notes:
1. Contractor to include drainage testing for all trees in bid. If drainage is inadequate, the soil specifications in Item #8 above shall be revised for site conditions. Contractor shall notify the owner and Landscape Architect of poor drainage conditions in writing and written direction will be provided to the contractor of appropriate soil mixture specification to be used.
2. All fertilizers shall meet the City of Port St. Lucie's fertilizer ordinance.

100% PLANS

P24-010

Michael Flaugh
LANDSCAPE ARCHITECT
FL Reg #LA0001728
772.419.0024
Stuart
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Sheet L5
Planting Details & Specifications

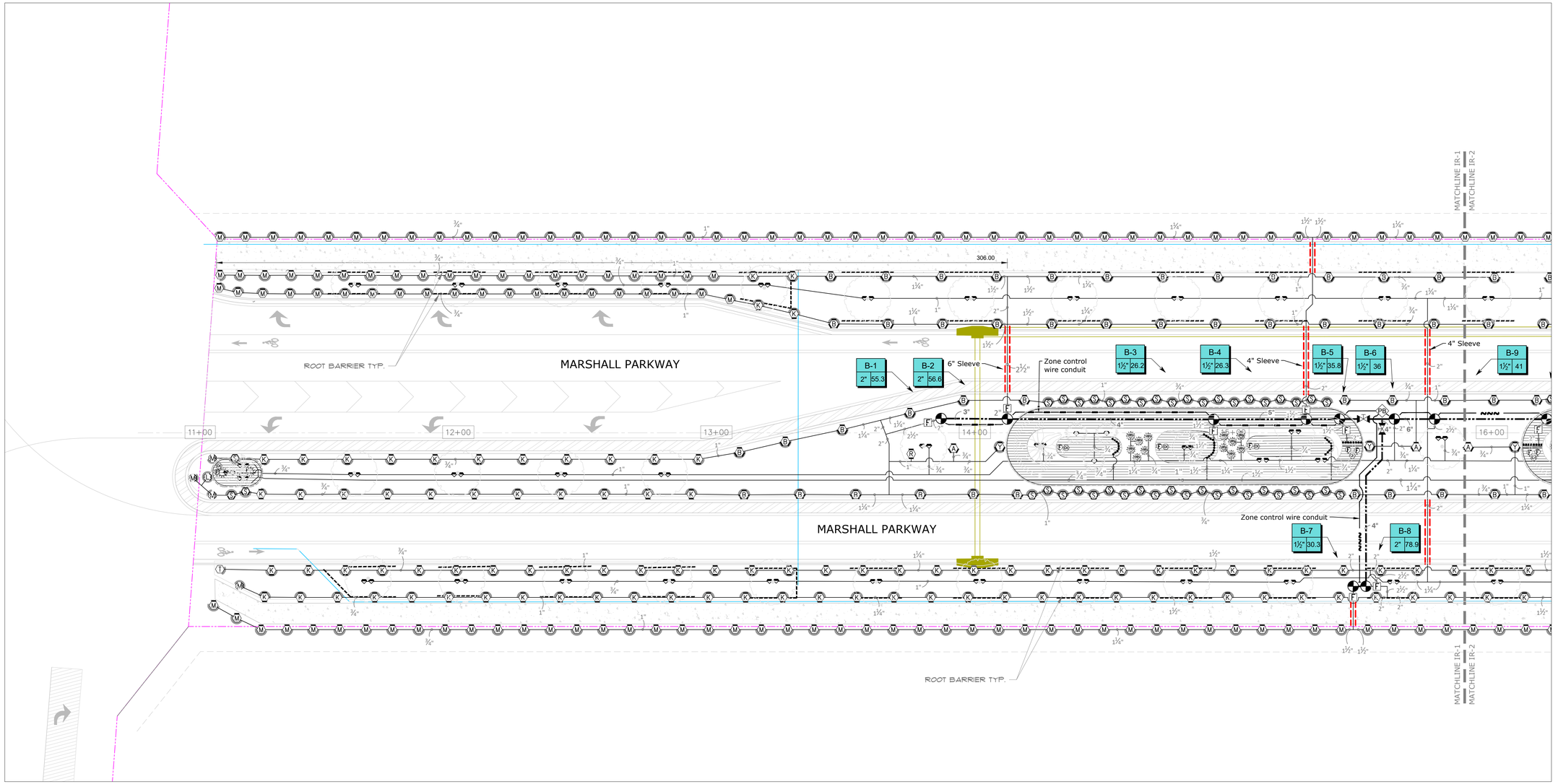
Landscape Plan
MARSHALL BLVD. EXTENSION
Port St. Lucie, FL

Michael Flaugh
Digitally signed by Michael Flaugh
Date: 2024.04.29 13:07:41 -04'00'

Please note: This landscape plan is a professional interpretation of existing and proposed site elements based on multiple sources of information. These sources may include: property surveys, architectural plans, google earth imagery, site observations, photographs and site plans. At times, these supporting documents are inaccurate or approximate at best and require adjustments to the design during installation and necessary. ***It is the contractors responsibility to verify all measurements and quantities prior to commencing work.***

REGISTERED LANDSCAPE ARCHITECT MICHAEL FLAUGH LA0001728 STATE OF FLORIDA

Date: 01/12/2024
Design by: PA, MF
Reviewed by: MF
Revised:
100% PLANS: 05/01/2024



VALVE SCHEDULE MARSHALL PARKWAY

NUMBER	MODEL	SIZE	TYPE	GPM	PSI	PSI @ POC	PRECIP
B-1	Rain Bird PESB-NP-HAN	2"	Turf Rotary	55.32	36.5	45.1	0.62 in/h
B-2	Rain Bird PESB-NP-HAN	2"	Turf Rotary	56.62	36.5	44.9	0.61 in/h
B-3	Rain Bird PESB-NP-HAN	1-1/2"	Area for Dripline	26.23	41.7	49.7	1.44 in/h
B-4	Rain Bird PESB-NP-HAN	1-1/2"	Turf Rotary	26.3	36.2	44.1	0.3 in/h
B-5	Rain Bird PESB-NP-HAN	1-1/2"	Area for Dripline	35.76	37.8	45.6	1.44 in/h
B-6	Rain Bird PESB-NP-HAN	1-1/2"	Bubbler	36	41.2	49.0	2.18 in/h
B-7	Rain Bird PESB-NP-HAN	1-1/2"	Turf Rotary	30.35	35.8	44.0	0.33 in/h
B-8	Rain Bird PESB-NP-HAN	2"	Turf Rotary	78.92	36.1	44.2	0.59 in/h
B-9	Rain Bird PESB-NP-HAN	1-1/2"	Bubbler	41	35.3	43.0	2.22 in/h
B-10	Rain Bird PESB-NP-HAN	1-1/2"	Area for Dripline	37.93	37.7	45.3	1.44in/h
B-11	Rain Bird PESB-NP-HAN	2"	Turf Rotary	69.68	34.7	41.9	0.56 in/h
B-12	Rain Bird PESB-NP-HAN	2"	Turf Rotary	55.44	36.3	43.4	0.64 in/h
B-13	Rain Bird PESB-NP-HAN	1"	Area for Dripline	9.38	39.3	45.7	1.44 in/h

0 20 40 60 80 feet

1" = 20'

811 Know what's below. Call before you dig.

Michael Flaugh

Digitally signed by Michael Flaugh
Date: 2024.04.29 13:07:58 -04'00'

PSL Project nr: P24-010
100% Plans

Scale:	1" = 20'
Design Date:	01-12-2024
Drawn By:	RT
Last Date: Modified	05-01-2024

Revisions: 1. 2. 3. 4. 5. 6.

IRRIGATION PLAN

Marshall Parkway Extension

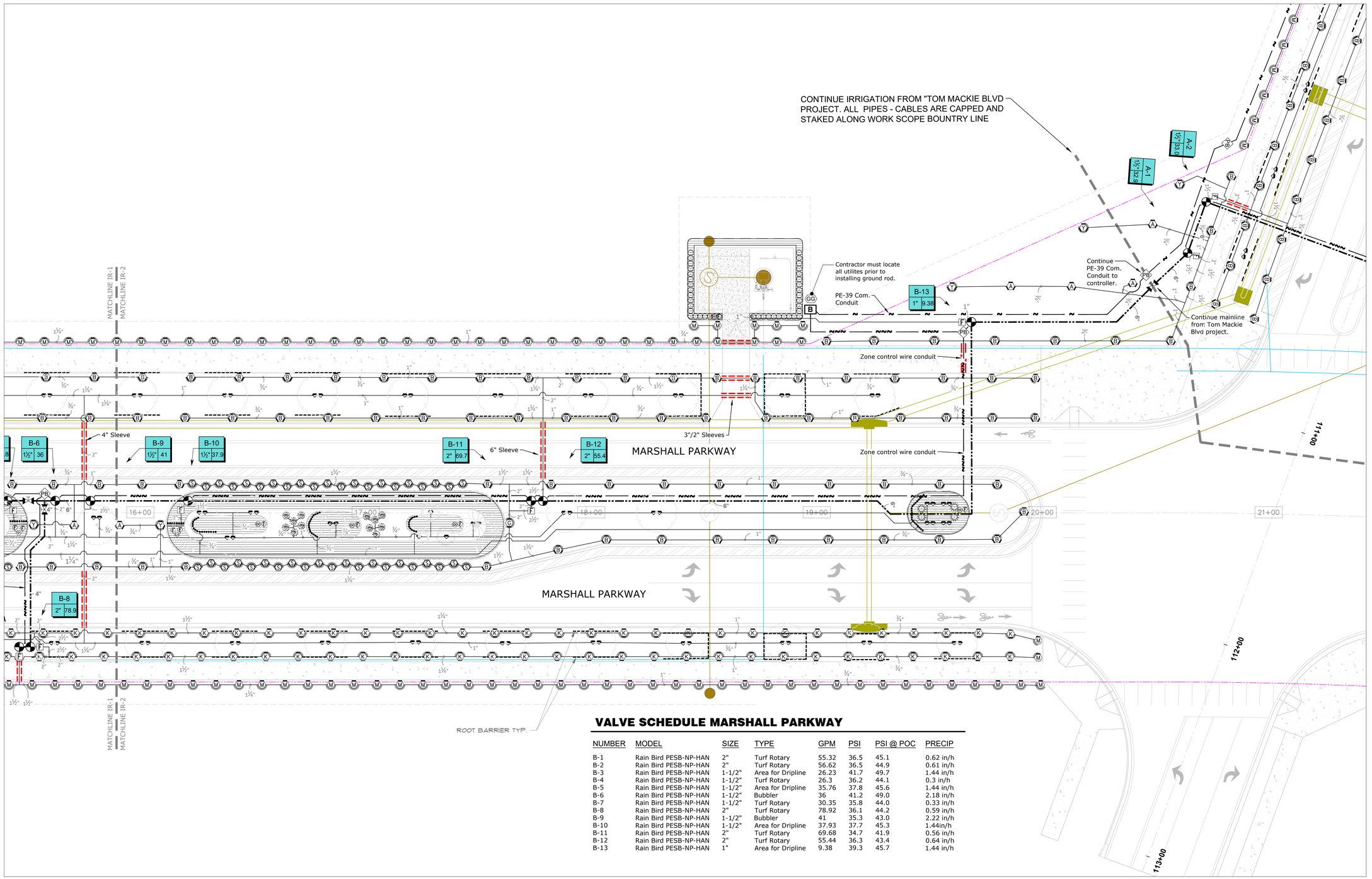
Port St. Lucie, Florida

NORTH

REGISTERED LANDSCAPE ARCHITECT MICHAEL FLAUGH LA 6666978 STATE OF FLORIDA

IR-1
of 6

Project # P24-010



VALVE SCHEDULE MARSHALL PARKWAY

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B-2	Rain Bird PESB-NP-HAN	2"	Turf Rotary	56.62	36.5	44.9	0.61 in/h
B-3	Rain Bird PESB-NP-HAN	1-1/2"	Area for Dripline	26.23	41.7	49.7	1.44 in/h
B-4	Rain Bird PESB-NP-HAN	1-1/2"	Turf Rotary	26.3	36.2	44.1	0.3 in/h
B-5	Rain Bird PESB-NP-HAN	1-1/2"	Area for Dripline	35.76	37.8	45.6	1.44 in/h
B-6	Rain Bird PESB-NP-HAN	1-1/2"	Bubbler	36	41.2	49.0	2.18 in/h
B-7	Rain Bird PESB-NP-HAN	1-1/2"	Turf Rotary	30.35	35.8	44.0	0.33 in/h
B-8	Rain Bird PESB-NP-HAN	2"	Turf Rotary	78.92	36.1	44.2	0.59 in/h
B-9	Rain Bird PESB-NP-HAN	1-1/2"	Bubbler	41	35.3	43.0	2.22 in/h
B-10	Rain Bird PESB-NP-HAN	1-1/2"	Area for Dripline	37.93	37.7	45.3	1.44in/h
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B-12	Rain Bird PESB-NP-HAN	2"	Turf Rotary	55.44	36.3	43.4	0.64 in/h
B-13	Rain Bird PESB-NP-HAN	1"	Area for Dripline	9.38	39.3	45.7	1.44 in/h

0 20 40 60 80 feet

1" = 20'

811 Know what's below. Call before you dig.

Michael Flaugh

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Date: 2024.04.29 13:08:15 -04'00'

PSL Project nr: P24-010
100% Plans

Scale:	1" = 20'
Design Date:	01-12-2024
Drawn By:	RT
Last Date: Modified	05-01-2024

Revisions:
1.
2.
3.
4.
5.
6.

IRRIGATION PLAN

Marshall Parkway Extension

Port St. Lucie, Florida

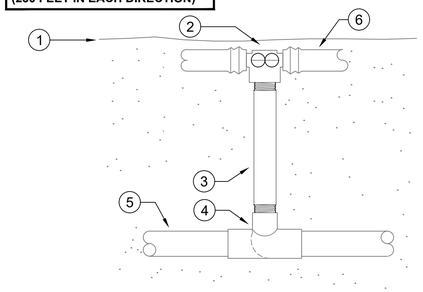
NORTH

REGISTERED LANDSCAPE ARCHITECT MICHAEL FLAUGH LA 6678 STATE OF FLORIDA

IR-2
of 6

Project #
P24-010

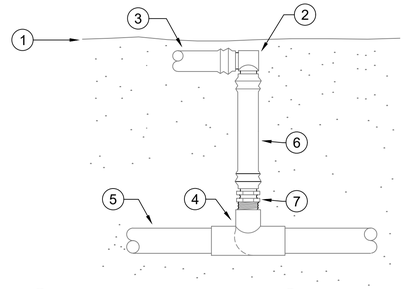
**MAX 6.90 GPM FLOW PER RISER.
(230 FEET IN EACH DIRECTION)**



1. FINISHED GRADE
2. NETAFIM COMBINATION TEE MOD TL075MA.
3. 3/4" SCH-80 NIPPLE, LENGTH AS REQUIRED.
4. SCH-40 PVC TEE, (S x S x FPT).
5. PVC PIPE, DRIPLINE SUPPLY / EXHAUST HEADER.
6. DRIPLINE 2-INCHES BELOW FINISHED GRADE.

1 DRIPLINE SUPPLY HEADER CENTER FEED RISER

N.T.S. DRIPLINE SUPPLY HEADER CENTER FEED RISER

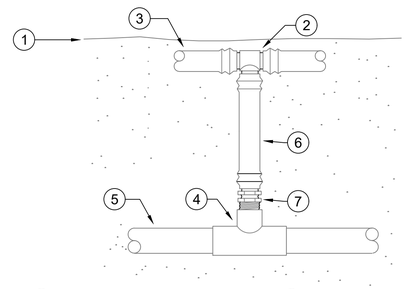


1. FINISHED GRADE
2. NETAFIM TLELL, ELBOW.
3. DRIPLINE, SEE SPECIFICATIONS FOR TYPE. PLACE 2-INCHES UNDER MULCH.
4. SCH-40 PVC ¾" TEE, (S x S x FPT) OR ¾" (S x FPT) ELBOW
5. PVC PIPE, DRIPLINE SUPPLY / EXHAUST HEADER.
6. BLANK TUBING.
7. NETAFIM TL075MA ADAPTOR.

MAX 3.45 GPM FLOW PER BLANK TUBING RISER.

2 DRIPLINE SUPPLY / EXHAUST HEADER CONNECTION

N.T.S. DRIPLINE SUPPLY / EXHAUST HEADER CONNECTION



1. FINISHED GRADE
2. NETAFIM TLTEE.
3. DRIPLINE, SEE SPECIFICATIONS FOR TYPE. PLACE 2-INCHES BELOW FINISHED GRADE.
4. SCH-40 PVC ¾" TEE, (S x S x FPT).
5. PVC PIPE, DRIPLINE SUPPLY / EXHAUST HEADER.
6. BLANK TUBING.
7. NETAFIM TL075MA ADAPTOR.

MAX 3.45 GPM FLOW PER BLANK TUBING RISER.

3 DRIPLINE SUPPLY / EXHAUST HEADER CONNECTION

N.T.S. DRIPLINE SUPPLY / EXHAUST HEADER CONNECTION

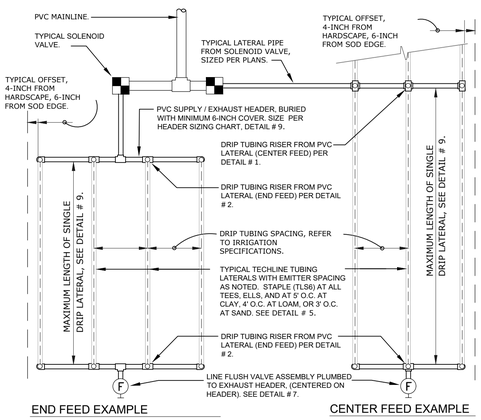
DRIP SPECIFICATIONS:

1. DRIP TUBING; NETAFIM TECHLINE-CV, ROW SPACING 12-INCHES. DRIP GRID LAY-OUT IS BASED ON 30 PSI. ALL DRIP ZONE VALVES HAVE A RAIN BIRD PRS-D PRESSURE REGULATOR ON SOLENOID VALVE SET TO PRESSURE NOTED IN VALVE SCHEDULE.

2. INSTALL DRIP SYSTEM IN THE FOLLOWING ORDER: A). WITH ALL MAINLINE AND IT'S ASSOCIATE EQUIPMENT COMPLETELY INSTALLED, FLUSH MAINLINE TILL FREE AND CLEAR OF DEBRIS. B). INSTALL ALL LATERALS TO THE VARIOUS DRIP GRIDS, AND SUPPLY HEADERS WITH RISERS EXTENDED ABOVE GROUND. CENTER FEED RISERS, TEMPORARY EXTEND NIPPLES WITH PIPE AND COUPLINGS (DO NOT GLUE). FLUSH TILL FREE AND CLEAR OF DEBRIS, TEMPORARY CAP NIPPLES, SEAL BLANK TUBING (RISERS) WITH TAPE. C). INSTALL EXHAUST HEADERS - RISERS - FLUSH POINTS. D). INSTALL DRIP GRID, STAPLE TUBING PER DETAIL #5, CONNECT DRIP TUBING TO SUPPLY HEADER RISERS. FLUSH TILL FREE AND CLEAR OF DEBRIS. E). CONNECT DRIP GRID TO EXHAUST HEADER RISERS, FLUSH SYSTEM USING "FLUSH VALVE". PVC DISCHARGE AND EXHAUST HEADERS MUST BE BURIED WITH MINIMUM 6" COVER. MULCH IS NOT CONSIDERED AS COVERAGE.

3. INSTALL OPERATION INDICATORS "OI" WITHIN 12-INCHES OF FLUSH POD, ONE AT END OF EACH DRIP GRID. SEE DETAIL #6. ACTIVATE DRIP ZONE, ENSURE ALL OPERATION INDICATORS ARE FULLY EXTENDED, ADJUST STREAM SPRAY TO WHERE IT CAN EASILY BE SEEN BY MAINTENANCE PERSON.

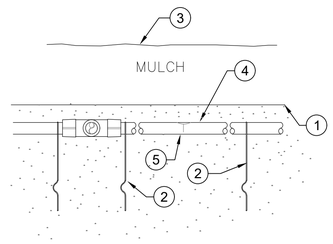
4. PRESSURE TEST WITH OWNERS REPRESENTATIVE PRESENT; PER ZONE, TEMPORARY INSTALL (2) PRESSURE GAUGES (LIQUID FILLED PRESSURE GAUGES) ON (2) FLUSH POINTS, (1) ON LARGEST GRID "FLUSH POINT" AND THE OTHER ON FARTHEST GRID "FLUSH POINT". ACTIVATE ZONE, AFTER FLOW HAS STABILIZED, VERIFY ALL ZONE OPERATION INDICATORS ARE FULLY EXTENDED, CHECK PRESSURE ON BOTH GAUGES, PRESSURE MUST BE 20 PSI OR HIGHER TO PASS TEST. IF TEST FAILS, CONTRACTOR TO LOCATE AND CORRECT PROBLEM AND RETEST. IT IS IN THE CONTRACTORS BEST INTEREST TO PERFORM HIS OWN TEST BEFORE HE CALLS OWNERS REPRESENTATIVE PRESENTS TO AVOID RE-INSPECTION FEE'S



END FEED EXAMPLE CENTER FEED EXAMPLE

4 GENERAL DRIP EQUIPMENT PLACEMENT

N.T.S.



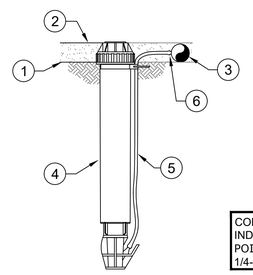
NOTES:

1. PLACE TIE DOWN STAKES EVERY 3-FEET IN SAND, 4-FEET IN LOAM, AND EVERY 5-FEET IN CLAY.
2. PLACE (1) DRIP STAKE ON EACH FITTING. IN LOOSE SANDY SOIL, PLACE DRIP STAKES ON A 60-DEGREE ANGLE (ALONG DRIPLINE), AND (2) STAKES ON 60 DEGREE ANGLE ON EACH DRIP FITTING.

1. FINISHED GRADE.
2. TIE DOWN STAKE: RAIN BIRD TDS-050 WITH BEND.
3. MULCH.
4. DRIPLINE.
5. DRIPPER.

5 RAIN BIRD TDS-050 (WITH BEND) DRIP STAKES

N.T.S.



1. FINISHED GRADE.
2. TOP OF MULCH.
3. ON SURFACE DRIP TUBING.
4. OPERATION INDICATOR.
5. 1/4" TUBING - PROVIDED WITH POP-UP.
6. CONNECT TO DRIP TUBING. RAIN BIRD 1/4" XBF1CONN.

CONTRACTOR MUST PLACE OPERATION INDICATOR WITHIN 12-INCHES OF FLUSH POINT / VALVE ASSEMBLY. EXTEND 1/4-INCH TUBING AS NECESSARY.

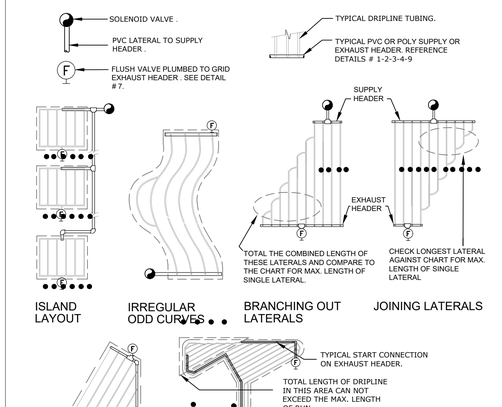
NOTES:

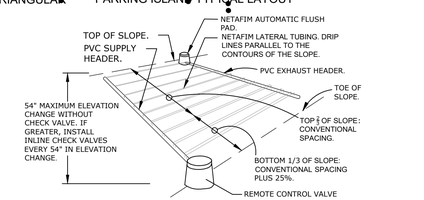
1. USE XERIMAN TOOL XM-TOOL TO INSERT BARB TRANSFER FITTING DIRECTLY INTO DRIPLINE TUBING.

2. VAN NOZZLE MAY BE SET TO CLOSE, OR IF IT IS DESIRED TO SEE SPRAY FROM NOZZLE, SET THE ARC TO ¼ PATTERN. THE FLOW FROM NOZZLE MUST BE DIRECTED WITHIN PLANTING AREA, VISIBLE ENOUGH TO BE SEEN / LOCATED BY MAINTENANCE PERSON.

6 RAIN BIRD OPERATION INDICATOR

N.T.S.





SLOPE FEED LAYOUT

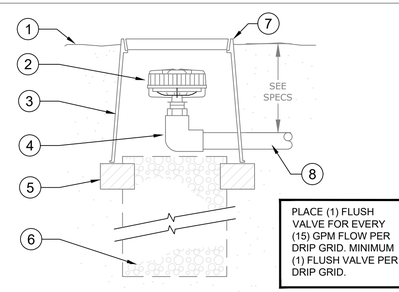
NOTES:

1. THESE TYPICAL LAY-OUT DRAWINGS ARE TO SHOW HOW THE WATER MOVEMENT IN DRIP LINES FLOW TOWARDS EXHAUST HEADER, AND WHAT REQUIRED CALCULATIONS ARE NEEDED TO BE PERFORMED BY CONTRACTOR.

2. MOST LANDSCAPE BEDS ARE IRREGULAR AND MAY NOT REFLECT THE SHAPE AND SIZE AS SHOWN IN THESE DETAILS. CONTRACTOR SHALL LAY-OUT SHRUB BED DRIP GRID BASE ON THE PRINCIPLES SHOWN IN THIS DETAIL AND ACCORDING TO ALL OTHER DETAILS SHOWN ON THIS SHEET.

10 TYPICAL DRIP GRID LAY-OUT

N.T.S.



PLACE (1) FLUSH VALVE FOR EVERY (15) GPM FLOW PER DRIP GRID. MINIMUM (1) FLUSH VALVE PER DRIP GRID.

1. FINISHED GRADE.
2. NETAFIM LINE FLUSH VALVE. TL050MFV-1 FOR FLOWS ABOVE 3.64 GPM. TLFV-1 FOR FLOWS UP TO 3.64 GPM .
3. RAIN BIRD VB-10RND VALVE BOX.
4. 1" SCH-40 ELBOW (S x FPT), WITH 1" x ½" BUSHING.
5. BRICKS - ONE OF THREE.
6. 3/4" GRAVEL SUMP (1 CUBIC FOOT).
7. RAIN BIRD PVB-6RND VALVE BOX. TOP OF VALVE BOX FLUSH WITH TOP OF MULCH.
8. 1-INCH PVC LATERAL FROM EXHAUST HEADER.

7 NETAFIM FLUSH VALVE - PLUMBED TO PVC

N.T.S.

TECHLINE-CV DRIPLINE GENERAL GUIDELINES FOR WATERING TIME

	TURF			SHRUB & GROUND COVER		
	CLAY	LOAM	SANDY	CLAY	LOAM	SANDY
DIPPER FLOW (GPH)	0.40	0.60	0.90	0.40	0.60	0.90
DRIPPER INTERVAL	24"	12"	12"	24"	18"	12"
LATERAL (ROW) SPACING	18"–24"	12"	9"–12"	18"–24"	18"–24"	12"–18"
APPLICATION RATE (IN/HR)	.22–.17	.96	1.93–1.44	.22–.17	.43–.32	1.44–.96
TIME TO APPLY 1/4"	68–88	16	8 –10	68–88	35–47	10–16

Michael Flaugh

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Date: 2024.04.29 13:08:50 -04'00'

8 NETAFIM TECHLINE-CV DRIPLINE TABLE -1

N.T.S.

NETAFIM TECHLINE-CV MAXIMUM LENGTH OF SINGLE LATERAL (FEET)

DRIPPER SPACING			12"			18"			24"	
DRIPPER FLOW RATE (GPH)			0.42	0.61	0.92	0.42	0.61	0.92	0.61	0.92
INLET PRESSURE (PSI)	20	–	242	190	144	–	468	270	204	342	260
	25	–	302	238	180	–	429	388	257	430	326
	35	–	380	299	227	–	540	426	323	542	412
	45	–	436	343	260	–	620	489	371	622	472

NETAFIM TECHLINE FLOW PER 100 FEET

DRIPPER SPACING			0.42 GPH DRIPPER		0.61 GPH DRIPPER		0.92 GPH DRIPPER	
	GPH	GPM	GPH	GPM	GPH	GPM	GPH	GPM
12"	–	–	42.30	0.71	60.8	1.01	92.5	1.54
18"	–	–	28.20	0.47	40.50	0.68	61.6	1.03

SUPPLY AND EXHAUST HEADER SIZING CHART (UNLESS NOTED ON PLANS)

STEP 1: ADD LENGTH OF ALL TECHLINE LATERAL TUBING CONNECTED TO THE HEADER.
STEP 2: DIVIDE THIS TOTAL LENGTH BY 100 TO INDICATE THE LENGTH IN UNITS OF 100.
STEP 3: LOCATE THE GPM THAT APPLIES FOR EACH UNIT OF 100 FEET LENGTH ON THE CHART "TECHLINE FLOW PER 100 FEET". MULTIPLY THIS GPM NUMBER TIMES THE UNITS OF 100 FEET FOR THE TOTAL GPM AT THIS HEADER.
STEP 4: SIZE THE HEADER WITH THE FOLLOWING:
1 TO 6 GPM: 3/4" HEADER. 6 TO 10 GPM: 1" HEADER.
10 TO 20 GPM: 1 1/4" HEADER. 20 TO 30 GPM: 1 1/2" HEADER.

9 NETAFIM TECHLINE-CV DRIPLINE TABLE - 2

N.T.S.

PSL Project nr: P24-010
100% Plans

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Design Date:	01-12-2024
Drawn By:	RT
Last Date: Modified	05-01-2024

Revisions: 1. 2. 3. 4. 5. 6.

IRRIGATION DRIP DETAILS

Extension

Marshall Parkway

Port St. Lucie, Florida

NORTH

REGISTERED LANDSCAPE ARCHITECT MICHAEL FLAUGH LA 6666978 STATE OF FLORIDA

IR-3
of 6

Project # PSL Project P24-010

MAXICOM NOTES & SPECIFICATIONS

MAXICOM design based on Irrigation plans for Community Blvd and Discovery Way. Contractor shall refer to these plans to coordinate controller, flow sensors, wiring, etc. installation with the general contractor and any and all other affected trades.

Each system has been designed to conform with the requirements of all applicable codes. Should any conflict exist, the requirements of the codes shall prevail. It is the responsibility of the owner/installation contractor to insure the entire system is installed according to all applicable laws, rules, regulations and conventions.

THE WORK

The work specified in this section consists of furnishing, testing, and delivering all components necessary for a Rain Bird Maxicom2 central control system. This system shall fully comply with the current MAXICOM2 installation manual, Maxicom plans, specifications, notes, details and all applicable laws, regulations, codes and ordinances. This work shall include, but not be limited to, the providing of all required material (Site–Sat Controllers, flow sensor, rain can, fittings, surge protection, grounding, wire, etc.), layout, protection to the public, excavation, assembly, installation, back filling, compacting, repair of road surfaces, controller and low voltage feeds from valves to pump station, meters, etc., cleanup, maintenance, guarantee and as–built plans.

The system is designed to be a Rain Bird MAXICOM2 system utilizing a 'cell phone accessed' Site–Sat Controller for communication between the site and the central monitoring computer. The contractor shall coordinate the installation and setup of this cell phone service. The contractor is responsible for installing all control system components. The fees associated with initial installation/connection and on going monthly fees will be paid by and coordinated with the City of Port Saint Lucie.

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

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

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

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

ELECTRICAL POWER SUPPLY

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

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

WIRING

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

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

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

Wire sized, numbered and colored as follows for master valve control only:
- #12 white for common
- #12 spare black common
- #14 red for hot wires
- #14 spare yellow hot wire

MAXICOM2 'two wire' (for communication between flow meters/rain cans, controllers) shall be PE–39 'three pair' #19 wire installed in 1.5" PVC grey conduit using Carson 1419 valve boxes as 'pull boxes' set a maximum of 300' apart and at all changes in direction.

Controller grounding – Contractor to utilize 4"X8' copper grounding plates, 5/8"X10' copper clad grounding rods, 'one strike' CAD welds at all connection points, #6 insulated copper wire, and earth contact material. Install these and other required components as outlined in the details. Contractor to verify that the earth to ground resistance does not exceed 10 ohms. Contractor shall provide a written certification, on an electrical contractors letter head, showing the date of the test, controller location, and test results. Each controller, CCU, and weather station shall be tested.

EQUIPMENT

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

LAYOUT

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

TRENCHING

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

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

INSTALLATION

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

BACK FILL

Wiring shall be installed so the following minimum back fill depths are maintained:
- 24" for all wire whether installed in conduit or not.
- 36" for all wire installed in sleeving under roadways and walks.

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

MAXICOM
The irrigation system shall be controlled by a Rain Bird Maxicom2 central control system. Contractor is responsible for providing a fully functional Maxicom2 system including all field components. No computer or monitoring software is included.

MAXICOM CENTRAL CONTROL SYSTEM

The irrigation shall be controlled by a Rain Bird Maxicom2 central control system. Contractor is responsible for providing a fully (field component only) functional Maxicom2 system. The system must comply with the current Rain Bird Maxicom 2 installation manual. The installation of all components shall be under the direct supervision of a person who has successfully completed both a level 2 hardware and a level 2 software class given by Rain Bird. No deviation from the installation manual will be permitted without written permission from the owner or the owner's representative.

- The Maxicom2 system to be installed will be a cell phone accessed. The installation shall consist of, but is not limited to, the following major components:
  - 1 – ESP–40SAT–2S (40 station, stainless steel pedestal, satellite controllers)
  - 1 – 4" Tipping Rain Gauge
  - 1 – Mag meter
  - 1 – Normally closed master valve
  - 1 – Model # PT322 Rain Bird 322 pulse transmitter
  - 2 – Rain Bird DECSEN Sensor Decoders
  - 1 – Rain Bird DECPUL Pulse Decoders
  - 1 – MGP–1 Surge Protector
  - 1 – Ctek 4550 cell modem with AC Adaptor and a 4g Mobile Mark paddle antenna
  - Miscellaneous velcro/zip ties for modem mounting
- Proper grounding for each controller (see details).

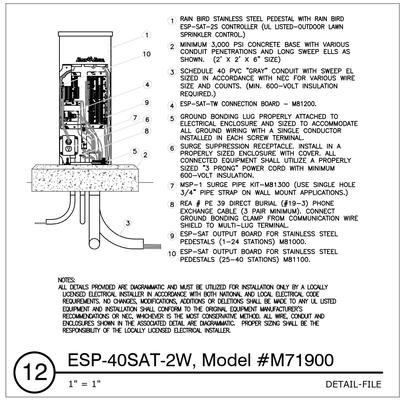
NOTE 1: The above list is for contractor convenience. Refer to the Maxicom2 installation manual for a complete and detailed list of required components.

NOTE 2: City of Port St. Lucie shall provide Sim Card for connection to City's Verizon Account

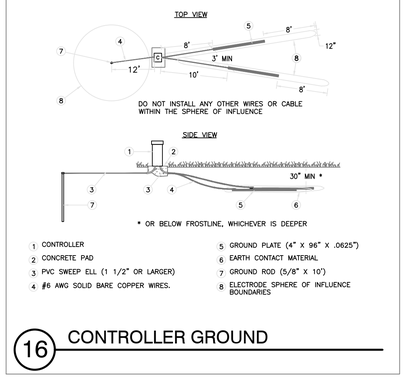
MAXICOM

1. THE IRRIGATION SYSTEM SHALL BE CONTROLLED BY A RAIN BIRD MAXICOM2 CENTRAL CONTROL SYSTEM. CONTRACTOR IS RESPONSIBLE FOR PROVIDING A FULLY FUNCTIONAL MAXICOM2 SYSTEM, INCLUDING ALL FIELD COMPONENTS. CONTRACTOR IS NOT RESPONSIBLE FOR PROVIDING THE MONITORING COMPUTER OR SOFTWARE.
2. THE SYSTEM MUST COMPLY WITH THE CURRENT RAIN BIRD MAXICOM2 INSTALLATION MANUAL. ALL COMPONENTS SHALL BE INSTALLED BY AN EMPLOYEE WHO HAS SUCCESSFULLY COMPLETED BOTH A RAIN BIRD LEVEL 2 HARDWARE AND LEVEL 2 SOFTWARE TRAINING CLASS. NO DEVIATIONS FROM THE INSTALLATION MANUAL WILL BE PERMITTED WITHOUT WRITTEN PERMISSION FROM THE OWNER OR THE OWNER'S REPRESENTATIVE.
3. CONTRACTOR TO INSTALL FUSE BETWEEN EACH PT-322 AND IT'S POWER SUPPLY UTILIZING BUSS FUSE HOLDER MODEL # HFB (30A-32V) WITH 1/8A-3/16A, 250V SLOW BLOW BUSS FUSE
4. CONTRACTOR TO PROVIDE AND INSTALL ONE 'ICE CUBE' RELAY (OR APPROVED EQUAL) FOR EACH CONTROLLER PROVIDED AND A STANDARD RAIN BIRD 110 BY 24 VOLT TRANSFORMER. BOTH TO BE INSTALLED AT DESIGNERS DIRECTION.
5. CONTRACTOR TO GROUND EACH CONTROLLER AS INDICATED IN THE IRRIGATION NOTES AND DETAILS. PROVIDE WRITTEN CERTIFICATION, ON A MASTER ELECTRICIANS LETTER HEAD, INDICATING DATE OF TEST, IDENTITY OF THE HARDWARE TESTED (USE SYMBOLS ON THESE PLANS FOR IDENTIFIER), THE EARTH GROUND RESISTANCE MEASURED, AND THE TEST METHOD UTILIZED.
6. THE NC MASTER VALVE SHALL CONNECT TO THE MV1 TERMINAL STRIP OF CONTROLLER. UTILIZE #12 CONTROL WIRE.
7. INSTALL 'HOSPITAL GRADE', SURGE PROTECTED, DUPLEX PLUGS IN CONTROLLER PEDESTALS, PROVIDE 'PIG TAIL' TO PLUG CONTROLLER INTO THIS PLUG
8. INSTALL PULSE TRANSMITTERS, DECODERS, INLINE 'PIPE BOMB' SURGE SUPPRESSORS, BONDING, GROUNDING AND SHIELDING OF ALL COMPONENTS AS REQUIRED IN MAXICOM II MANUAL.
9. CONTRACTOR TO RUN PE-39 WIRE FROM THE MAGNETIC FLOW METER TO A PT322 PULSE TRANSMITTER INSTALLED INSIDE CONTROLLER PEDESTAL.
10. CCU-28 SETUP AND CONTROLLER CONNECTIONS:
    - CONNECT THE MAGNETIC FLOW METERS TO CHANNELS 1 & 2
    - CONNECT THE RAIN CAN TO CHANNEL 3
    - CONNECT SAT 'C1' TO CHANNELS 4 & 5
    - CONNECT SAT 'C2' TO CHANNELS 6 & 7
11. ESP-SAT CONTROLLER (SEE DETAIL # 12) SHALL HAVE THE FOLLOWING CONDUITS WITH LONG SWEEPS RUNNING INTO CONTROLLERS:
    A) (3) 0.75" CONDUIT FOR SOIL MOISTURE SENSOR, GROUNDING GRID, 120v POWER.
    B) (1) 1.5" FOR PE-39 COM CABLE.
    C) (1) 2.5"/ 2" FOR ZONE CONTROL WIRES AND SPARES.
12. CCU-28 (SEE DETAIL #11) SHALL HAVE THE FOLLOWING CONDUITS RUNNING INTO CCU:
    A) (1) 1.5" CONDUIT FOR PE-39 COM CABLE.
    B) (1) 0.75" CONDUIT FOR 120v POWER.
    C) (3) 1" CONDUIT FOR FLOW SENSORS (MAIN PUMP AND LAKE REFILL) AND RAIN CAN.

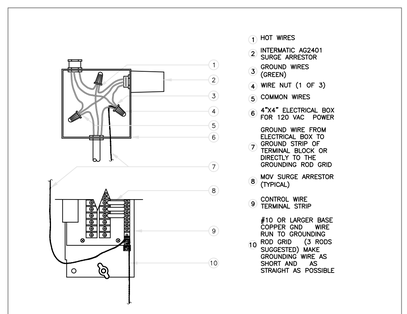
SEE SHEET IR-11 FOR ADDITIONS SPECIFICATIONS AND INSTALLATION REQUIREMENTS.



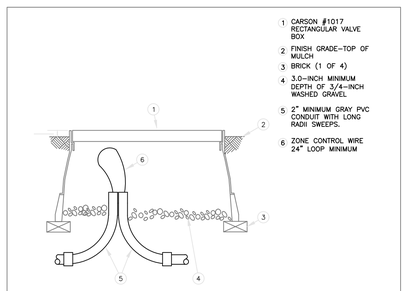
12 ESP-40SAT-2W, Model #M71900
1" = 1" DETAIL-FILE



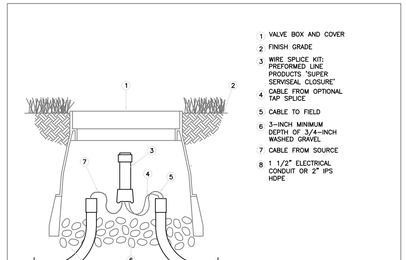
16 CONTROLLER GROUND



14 120 VOLT SURGE SUPPRESSION
DETAIL-FILE



18 CONTROL WIRE PULL / SPLICE BOX



15 PE-39-19 GAUGE, 3-PAIR

IRRIGATION SCHEDULE

SYMBOL	MANUFACTURER/MODEL/DESCRIPTION	
T	Hunter MP Corner Nozzle, Rain Bird RD06-P-30-NP Turf Rotator, 6in. pop-up with factory installed check valve, reclaimed body cap, pressure regulated to 30 psi, MP Rotator nozzle on RD-body. T=Turquoise adj arc 45-105.	
L N R LST SST RST	Hunter MP Strip Nozzle, Rain Bird RD06-P-30-NP Turf Rotator, 6in. pop-up with factory installed check valve, reclaimed body cap, pressure regulated to 30 psi, MP Rotator nozzle on RD-body. LST=Ivory left strip, SST=Brown side strip, RST=Copper right strip.	
M L O	Hunter MP1000 Nozzle, Rain Bird RD06-P-30-NP Turf Rotator, 6in. pop-up with check valve, reclaimed body cap, pressure regulated to 30 psi, MP Rotator nozzle on RD-body. M=Maroon adj arc 90 to 210, L=Light Blue 210 to 270 arc, O=Olive 360 arc.	
X G R	Hunter MP2000 Nozzle, Rain Bird RD06-P-30-NP Turf Rotator, 6in. pop-up with check valve, reclaimed body cap, pressure regulated to 30 psi, MP Rotator nozzle on RD-body. K=Black adj arc 90-210, G=Green adj arc 210-270, R=Red 360 arc.	
B Y A	Hunter MP3000 Nozzle, Rain Bird RD06-P-30-NPTurf Rotator, 6in. pop-up with factory installed check valve, reclaimed body cap, pressure regulated to 30 psi, MP Rotator nozzle on RD-body. B=Blue adj arc 90-210, Y=Yellow adj arc 210-270, A=Gray 360 arc.	
M L O	Hunter MP815 Nozzle, Rain Bird RD06-P-30-NP Turf Rotator, 6in. pop-up with check valve, reclaimed body cap, pressure regulated to 30 psi, MP Rotator nozzle on RD-body. M=Maroon and Gray adj arc 90 to 210, L=Light Blue and Gray 210 to 270 arc, O=Olive and Gray 360 arc	
1401 1402 1404 1408	Rain Bird RD06-S-NP, 1400 Flood Flood Bubbler on 6-inch popup with PA-80 adaptor and check valve.	
F	Netafim TL050MFV-1 Automatic flush valve, 1/2in. male pipe thread.	12
OI	Rain Bird OPERIND Drip System Operation Indicator, stem rises 6in. for clear visibility when drip system is charged to a minimum of 20psi. Includes 16in. of 1/4in. distribution tubing with connection fitting pre-installed.	9
	Area to Receive Dripline Netafim TLHCVXR-077-12-NP Techline HCVXR Pressure Compensating Landscape Dripline with Check Valve and Anti-Siphon feature. For Reclaimed Water only. 0.77 GPH emitters at 12" O.C. Dripline laterals spaced at 12" apart, with emitters offset for triangular pattern. 17mm.	8,940 sq.f.
	Rain Bird PESB-NP-HAN 1in., 1-1/2in., 2in., 3in. Durable Chlorine-Resistant Remote Control Valve for Reclaimed Water Applications. With Scrubber Mechanism Technology, and Purple Flow Control Handle.	
	Aquafuse Aquafuse Ductile Iron 'ControlFlo' isolation valves. Side per mainline.	
C2	Rain Bird ESP-40SAT-2S 40 Stations Satellite Controller for Maxicom and SiteControl. 120 VAC. Two-Wire Satellite Data Path. Stainless Steel Pedestal.	
F	Hunter HY-100-R, 151-R, 201-R 1in. MPT x MPT threaded inlet and outlet filter with 150 mesh stainless steel screen,and reclaimed water cap.	
GG	Controller Grounding Grid Grounding grid shall consits of (1) Ground Copper Clad Rod (5/8"x 10') and (2) Ground Plates (4"x 96"x 0.0625"). See detail drawing and specifications for installation.	
PB	Pull / Spice Box Carson rectangular valve box model # 1017. For zone control wires, boxes shall have a maximum spacing of 300-Feet. leave minimum 24-inches additional loose wire in valve box. Use only 3m DBY/R-6 splice kits.	
	Irrigation Lateral Line: PVC Class 200 SDR 21-NP Class 200 SDR 21 solvent weld bell end Purple PVC pipe. Use only Weld-On Medium body 721 Blue glue with P-70 purple primer. Apply solvent weld glue per manufactures instructions. See specifications and details for additional installation instructions.	
~	1.5-inch Sch-40, Gray electrical conduit for PE-39 communication cable. Install pull box every 300', and one for every three way juction. Use gray long radii sweeps for all directional changes.	
NNN	Sch-40 Gray electrical conduit for 'zone control' wires. Install pull box every 300', and one for every three way intersection. Use gray long radii sweeps for all directional changes. Contractor to size wire conduit, minimum size is 2-inches.	
	Irrigation Mainline: HDPE PE4710 DR 11-NP	
	Pipe Sleeve: Class 200 PVC with Sch-40 PVC fittings Solvent weld bell end PVC pipe. Sleeve fittingsshall be welded together utilizing Weld-On purple ECO primer and 711 ECO gray Glue. Extend sleeves 18-inches past back of curb or past edge of hardscape. Cap sleeves (no glue) and stake all sleeve ends with 2"x2" PT wood stakes - 2' foot above 'Finished Grade'. Paint fluorescent orange and mark sleeve size - type pipe - what it carries.	

Michael Flaugh
Digitally signed by Michael Flaugh
Date: 2024.04.29 13:09:08 -04'00'

Valve Callout
Valve Number
#" Valve Flow
Valve Size

PSL Project nr: P24-010
100% Plans

Scale:	1" = 20'
Design Date:	01-12-2024
Drawn By:	RT
Last Date: Modified	05-01-2024

Revisions: 1. 2. 3. 4. 5. 6.

MAXICOM DETAILS

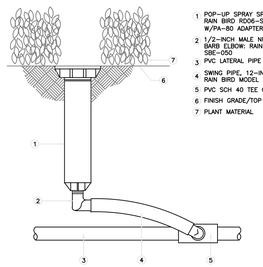
Marshall Parkway Extension
Port St. Lucie, Florida

NORTH

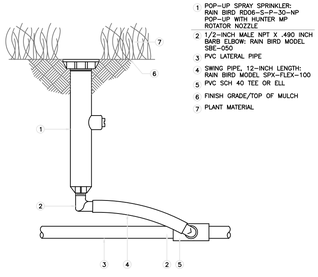
REGISTERED LANDSCAPE ARCHITECT MICHAEL FLAUGH STATE FLORIDA

IR-4
of 6

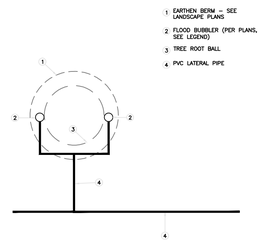
Project # P24-010



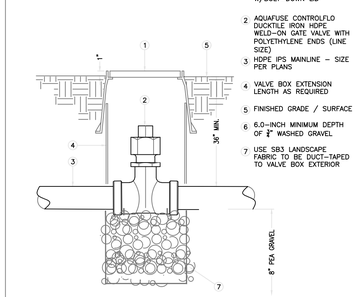
20 RAIN BIRD RD-6-S-P-30-NP
W/ PA-8 and 1400 Series Bubbler



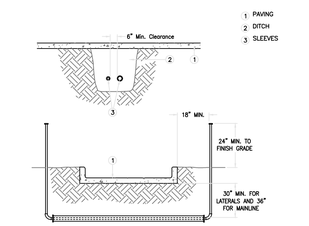
21 RAIN BIRD RD06-S-P-30-NP



22 BUBBLER PLACEMENT

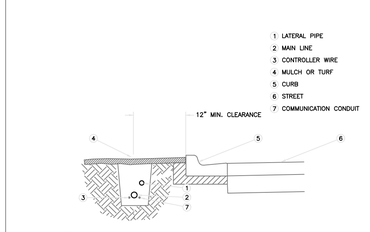


23 AQUAFUSE CONTROLFLO
DUCKTILE IRON GATE VALVE



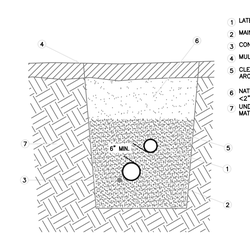
NOTES:
1. ALL PVC IRRIGATION SLEEVES TO BE CL 200 PVC PIPE.
2. ALL JOINTS TO BE SOLVENT WELDED AND WATERTIGHT.
3. MECHANICALLY TAMP TO 95% PROCTOR.

24 SLEEVING



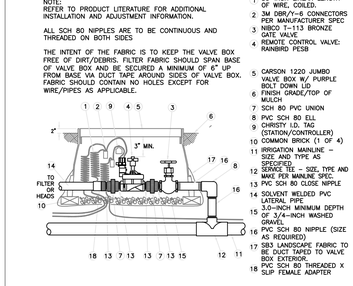
NOTES:
PIPE MINIMUM DEPTHS FROM TOP OF PIPE TO FINISHED GRADE:
1. MAIN LINE: ALL MAINLINE SHALL HAVE 36" COVERAGE.
2. LATERAL PIPE: 18" for pipes 3-inches or smaller, 24-inches for pipes 24-inches or larger.
3. SCH-40 GRAY ELECTRICAL CONDUIT FOR ZONE CONTROL WIRES, (next to mainline).
4. SCH-40 GRAY ELECTRICAL CONDUIT FOR PE-39 CABLE, (next to mainline).

25 Mainline and Lateral Placement



NOTE:
MECHANICALLY TAMP TO 95% PROCTOR.

26 Pipe Back Filling

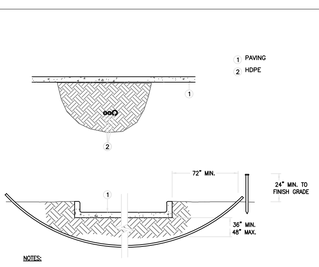


NOTE;
REFER TO PRODUCT LITERATURE FOR ADDITIONAL INSTALLATION AND ADJUSTMENT INFORMATION.

ALL SCH 80 NIPPLES ARE TO BE CONTINUOUS AND THREADED ON BOTH SIDES

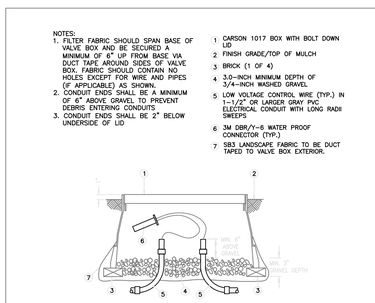
THE INTENT OF THE FABRIC IS TO KEEP THE VALVE BOX FREE OF DIRT/DEBRIS. FILTER FABRIC SHOULD SPAN BASE OF VALVE BOX AND BE SECURED A MINIMUM OF 6" UP FROM BASE VIA DUCT TAPE AROUND SIDES OF VALVE BOX. FABRIC SHOULD CONTAIN NO HOLES EXCEPT FOR WIRE/PIPES AS APPLICABLE.

27 RAIN BIRD PESB Zone Control Valve
W/ Nibco T-113 Gate Valve



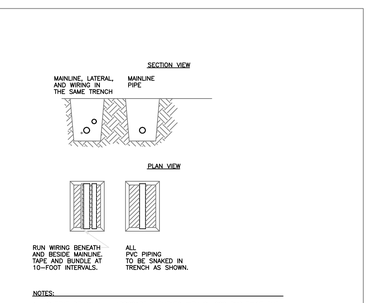
NOTES:
1. Contractor to duct tape ends of HDPE to keep it clean and clear.
2. Contractor to stake end of each sleeve above ground and paint florescent orange.
3. Contractor to provide a 3' minimum depth of coverage on all sleeves

28 HDPE DIRECTIONAL BORING



NOTES:
1. FILTER FABRIC SHOULD SPAN BASE OF VALVE BOX AND BE SECURED A MINIMUM OF 6" UP FROM BASE VIA DUCT TAPE AROUND SIDES OF VALVE BOX. FABRIC SHOULD CONTAIN NO HOLES EXCEPT FOR WIRE AND PIPES (IF APPLICABLE) AS SHOWN.
2. CONDUIT ENDS SHALL BE A MINIMUM OF 6" ABOVE GRAVEL TO PREVENT DEBRIS ENTERING CONDUITS
3. CONDUIT ENDS SHALL BE 2" BELOW UNDERSIDE OF LID

29 Zone Control Wire Splice



NOTES:
1. SLEEVE BELOW ALL HARDSCAPE ELEMENTS WITH CL 200 PVC TWICE THE DIAMETER OF THE PIPE OR WIRE BUNDLE WITHIN – MINIMUM OF 2"
2. FOR PIPE AND WIRE BURIAL DEPTHS SEE SPECIFICATIONS.

30 Pipe and Trenching

Michael Flaugh

Digitally signed by Michael Flaugh
Date: 2024.04.29 13:09:27 -04'00'

PSL Project nr: P24-010
100% Plans

Scale:	1" = 20'
Design Date:	01-12-2024
Drawn By:	RT
Last Date: Modified	05-01-2024

Revisions: 1. 2. 3. 4. 5. 6.

GENERAL DETAILS

Marshall Parkway Extension

Port St. Lucie, Florida

NORTH

REGISTERED LANDSCAPE ARCHITECT MICHAEL FLAUGH LA 6666915 STATE OF FLORIDA

IR-5
of 6

Project # P24-010

REFER TO; CITY OF PORT ST LUCIE PUBLIC WORKS IRRIGATION STANDARDS 328400 FOR COMPLE SPECIFICATION AND REQUIREMENTS

The system has been designed to conform with the requirements of all applicable codes, laws, ordinances, rules, regulations and conventions. Should any conflict exist, the requirements of the codes shall prevail. It is the responsibility of the owner/installation contractor to ensure the entire system is installed as designed. Irrigation contractor responsible for obtaining all required permits according to federal, state and local laws. I is the irrigation contractors sole responsibility to ensure that this project is in stalled according to all the latest state / local codes and ordinances pertaining to this project and to all manufactures recommended installation requirements whether mentioned herin or not.

THE WORK

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

All irrigated areas shall provide 100% head-to-head coverage from a fully automatic irrigation system with a rain/freeze shut off device. The shut off device shall be installed to prevent activation by adjacent heads and in a visually un-obtrusive location approved by owner. Zones are prioritized first by public safety and then by hydraulic concerns. This sequencing will be a mandatory punch list item.

These plans have been designed to satisfy/exceed the Florida Building Code (FBC) Appendix F and the Florida Irrigation Society Standards and Specifications for Turf and Landscape Irrigation Systems, fourth edition. All products should be installed per manufacturer's recommendation. Contractor shall verify all underground utilities 72 hours prior to commencement of work.

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

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

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

POINT OF CONNECTION (P.O.C.)

A new Hoover Pumping System Centrifical Pump station with an 'Apollo' self-cleaning 140 mesh discfilter providing 120 gpm @ 70 psi. The water supply is a lake (L22B) located north east of 'Tom Mackie Blvd'. A new lake re-fill pump station 100 gpm 2 40 psi and 6" Well, with lake level floats. Both pump stations Well, CCU-28 and ESP-SAT controller to be enclosed with-' Black vinyl 9 Gauge chain link fence WITH 3' main gate.

THE PIPE

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

All pipes are to be placed in planting beds. If it is necessary to have piping under hardscapes, such as roads, walks, and patios, the pipes must be sleeved using Class 200 PVC with the sleeve diameter being twice the size of the pipe it is carrying with a minimum sleeve size of 2". No sleeve shall have turns or fittings that prevent a pipe from being manually pushed/pulled through after it is installed. All directional bores shall be HDPE per plans.

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

Class 200 gasketted pantone purple PVC mainline with LEEMCO ductile iron fittings and mechanical joint restraints (size per plans).

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

PVC pipe joint compound and primer: The PVC cement shall be Weld-On 711 ECO (gray, ultra-low VOC, medium setting, maximum strength) and the primer shall be Weld-On ECO Primer (purple tinted, ultra-low VOC, fast acting) or approved equals.

ELECTRICAL POWER SUPPLY

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

All electrical work is to comply with the National Electrical Code and any, and all, other applicable electrical codes, laws and regulations. A licensed electrician shall perform all electrical hook-ups. Power for each controller shall be a dedicated 120 volt, 20 amp circuit unless otherwise specified in the plans.

WIRING

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

Tape and bundle control wires every 10' and run alongside the mainline. At all turns in direction make a 2' coil of wire. At all valve boxes coil wire around a 1" piece of PVC pipe to make a coil using 30 linear inches of wire. Make electrical connections with 3M DBR/Y-6 connectors.

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

Wire sized, numbered and colored as follows:
- #12 white for common
- #12 spare black common
- #14 individual color coded hot wire
- #14 spare yellow hot wire

SPARE WIRES

Leaving each controller, run six spare wires. Install as 2 common spares and 4 hot wires. Loop these wires into each RCV along their path and terminate in the last valve box controlled by the wires respective controller. The loop into each valve box shall extend up into the valve box a minimum of 8" and be readily accessible by opening the valve box lid. These wires must be all numbered and color coded as required in these plans.

CONTROLLER AND PUMP STATION CONTROL PANEL GROUNDING

Contractor to utilize 4"X96"X0.0625" copper grounding plates, 5/8"X10' copper clad grounding rods, 'One Strike' CAD welds at all connection points, #6 insulated copper wire, and earth contact material. Install these and other required components as outlined in the detail. Contractor to verify that the earth to ground resistance does not exceed 10 ohms. Contractor shall provide a written certification, on a licensed electrical contractors letter head, showing the date of the test, controller/pump location, and test results. Each controller/pump shall be so grounded and tested. Each component must have its own separate grounding grid, unless they are sitting side by side, in which case up to two controllers can share a common grounding grid.

LAYOUT

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

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

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

Shrub heads shall be installed on 3/4" Sch 40 PVC risers. The risers shall be set at a minimum of 18" off sidewalks, roadway curbing, building foundations, and/or any other hardscaped areas. Shrub heads shall be installed to a standard height of 4" below maintained height of plants and shall be installed a minimum of 6" within planted masses to be less visible and offer protection. Paint all shrub risers with flat black or forest green paint, unless irrigation system will utilize reuse water; in this case the risers shall be purple PVC and shall not be painted.

Locate valves prior to excavation. Ensure that their location provides for easy access and that there is no interference with physical structures, plants, trees, poles, etc. Valve boxes must be placed a minimum of 12" and a maximum of 13" from the edge of pavement, curbs, etc. and the top of the box must be 2" above finish grade. No valve boxes shall be installed in turf areas without approval by the irrigation designer - only in shrub beds.

VALVES

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

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

Using an electric branding iron, brand the valve I.D. letter/number on the lid of each valve box. This brand must be 2"-3" tall and easily legible.

EQUIPMENT

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

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

TRENCHING

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

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

INSTALLATION

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

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

HDPE4710-DR11 MAINLINE PIPE;
Refer to; Port St Lucie public works Irrigation Standards

BACK FILL

The Back fill 6" below, 6" above, and around all piping shall be of clean sand and anything beyond that in the trench can be of native material but nothing larger than 2" in diameter. In all planting beds backfill all trenches to 85% Proctor and all trenches under hardscapes to be backfilled and compacted to 95% Proctor.

Main line pipe depth measured to the top of pipe shall be:
- 30" minimum for 3" & 4" PVC with a 36" minimum at vehicular crossings.
- 36" minimum for 6" PVC with a 36" minimum at vehicular crossings.

Lateral line depths measured to top of pipe shall be:
- 18" minimum for 3/4"-3" PVC with a 30" minimum at vehicular crossings.

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

FLUSHING

Prior to the placement of valves, flush all mainlines for a minimum of 13 minutes or until lines are completely clean of debris, whichever is longer.

Prior to the placement of heads, flush all lateral lines for a minimum of 13 minutes or until lines are completely clean of debris, whichever is longer.

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

TESTING

Soil: At a minimum of 2 locations on the site, soil tests for infiltration and texture shall be performed according to the USDA Soil Quality Test Kit Guide. The tests shall be documented in a USDA Soil Worksheet.

All of the above is available at:
https://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/health/assessment/?cid=nrcs142p2_053873

The completed worksheet shall be submitted to the owners representative for review/approval. Do not proceed without written direction from the owner/owner's representative.

Schedule testing with Owner's Representative a minimum of three (3) days in advance of testing.

Contractor to utilize soil test data to inform the irrigation scheduling at the project, using BMP's issued by the Irrigation Association which can be download on line at:
https://irrigation.org/IA/Advocacy/Standards-Best-Practices/Landscape-Irrigation-BMPs/IA/Advocacy/Landscape-Irrigation-BMPs.aspx?hkey=93b546ad-c87a-41b8-bf70-8c4fd2cff931 (link at bottom of the webpage).

Read pages 47-52 in Appendix C for how to create irrigation schedules.

If these parameters are exceeded, locate the problem; repair it; wait 24 hours and retry the test. This procedure must be followed until the mainline passes the test.

Lateral Lines: The lateral lines must be fully filled to operational pressure and visually checked for leaks. Any leaks detected must be repaired.

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

Upon completion of the operational test, run each zone until water begins to puddle or run off. This will allow you to determine the number of irrigation start times necessary to meet the weekly evapotranspiration requirements of the planting material in each zone. In fine sandy soils, it is possible no puddling will occur. If this is experienced, then theoretical calculations for run times will be required for controller programming.

SUBMITTALS

Pre-Construction: Deliver five (5) copies of submittals to Owner's Representative within ten (10) working days from date of Notice to Proceed. Furnish information in 3-ring binder with table of contents and index sheet. Index sections for different components and label with specification section number and name of component. Furnish submittals for components on material list. Indicate which items are being supplied on catalog cut sheets when multiple items are shown on one sheet. Incomplete submittals will be returned without review. In lieu of hardcopies, an electronic package in PDF format can be submitted.

After project completion:
As a condition of final acceptance, the irrigation contractor shall provide the owner with:

1. Irrigations As-builts - shall be provided utilizing a sub-foot Global Navigation Satellite System (GNSS) to accurately locate all mainlines, sleeves, remote control valves, gate valves, independent wire runs, wire splice boxes, controllers, high voltage supply sources/conduit path, control mechanisms, sensors, wells and water source connections in Florida East State Plane, NAD 83, and CORS 96 format. The data collected shall be in POINT format and include an ID for each data point with Manufacturer, Type, Size, and Depth. All mainline and independent runs of wire shall be located every 30' for straight runs and at every change of direction. Sleeves will be located at end points and every 20' of length. All underground items shall include depth in inch format. These POINTS once collected shall be imported into an AutoCAD DWG geo-referenced base file to be labeled accordingly. The completed AS-Built shall be a Geo-Referenced DWF file and delivered to the owner on a compact disk (CD).
2. Controller charts - Upon completion of "as-built" prepare controller charts; one per controller. Indicate on each chart the area controlled by a remote control valve (using a different color for each zone). This chart shall be reduced to a size that will fit inside of the controller door. The reduction shall be hermetically sealed inside two 2ml pieces of clear plastic.
3. Grounding Certification - Provide ground certification results for each controller and pump panel grounding grid installed. This must be on a licensed electrician letter head indicating location tested (using IR plan symbols), date, time, test method, and testing results.

INSPECTIONS AND COORDINATION MEETINGS REQUIRED - Contractor is required to schedule, perform, and attend the following, and demonstrate to the owner and/or owners representative to their satisfaction, as follows:

1. Pre-construction meeting - Designer and contractor to review entire install process and schedule with owner/general contractor.
2. Mainline installation inspection(s) - all mainline must be inspected for proper pipe, fittings, depth of coverage, backfill. and installation method
3. Mainline pressure test - All mainline shall be pressure tested according to this design's requirements
4. Flow Meter calibration - All flow meters must be calibrated, provide certified calibration report for all flow meters.
5. USDA Soil Quality Tests for infiltration/texture
6. Coverage and operational test
7. Final inspection
8. Punch list inspection

FINAL ACCEPTANCE

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

1. All above inspections are completed, documented, and approved by owner.
2. Completion and acceptance of `as-built' drawings.
3. Acceptance of required controller charts and placement inside of controllers.
4. All other submittals have be made to the satisfaction of the owner.

GUARANTEE

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

MINIMUM RECOMMENDED IRRIGATION MAINTENANCE PROCEDURES

1. Every irrigation zone should be checked monthly and written reports generated describing the date(s) each zone was inspected, problems identified, date problems repaired, and a list of materials used in the repair. At minimum, these inspections should include the following tasks:
   - 1.A. Turn on each zone from the controller to verify automatic operation.
   - 1.B. Check schedules to ensure they are appropriate for the season, plant and soil type, and irrigation method. Consult an I.A. certified auditor for methods used in determining proper irrigation scheduling requirements.
   - 1.C. Check remote control valve to ensure proper operation.
   - 1.D. Check setting on pressure regulator to verify proper setting, if present.
   - 1.E. Check flow control and adjust as needed; ensure valve closure within 10-15 seconds after deactivation by controller.
   - 1.F. Check for leaks - mainline, lateral lines, valves, heads, etc.
   - 1.G. Check all heads as follows:
     - 1.G.a. Proper set height (top of sprinkler is 1" below mow height)
     - 1.G.b. Verify head pop-up height - 6" in turf, 12" in ground cover, and pop-up on riser in shrub beds.
     - 1.G.c. Check wiper seal for leaks - if leaking, clean head and re-inspect.
     - 1.G.d. If still leaking, replace head with the appropriate head with pressure regulator and built-in check valve.
     - 1.G.e. All nozzles checked for proper pattern, clogging, leaks, correct make and model, etc. - replace as needed.
     - 1.G.f. Check for proper alignment - perfectly vertical; coverage area is correct; minimize over spray onto hardscapes.
     - 1.G.g. Riser height raised/lowered to accommodate plant growth patterns and ensure proper coverage.
   - 1.H. Verify the pop-up riser retracts after operation. If not, repair/replace as needed
2. Check controller/C.C.U. grounds for resistance (10 ohms or less) once per year. Submit written reports.
3. Check rain shut-off device monthly to ensure it functions properly.
4. Inspect all filters monthly and clean/repair/replace as needed.
5. Inspect backflow devices by utilizing a properly licensed backflow inspector. This should be done annually, at minimum.
6. Inspect all valve boxes to ensure they are in good condition, lids are in place and locked.
7. Winterize, if applicable, as weather in your area dictates. Follow manufacturer recommendations and blow out all lines and equipment using compressed air. Perform seasonal startup of system as per manufacturer recommendations.
8. Conduct additional inspections, maintenance tasks, etc. that are particular for your site.

VALVE SCHEDULE MARSHALL PARKWAY

NUMBER	MODEL	SIZE	TYPE	GPM	PSI	PSI @ POC	PRECIP
B-1	Rain Bird PESB-NP-HAN	2"	Turf Rotary	55.32	36.5	45.1	0.62 in/h
B-2	Rain Bird PESB-NP-HAN	2"	Turf Rotary	56.62	36.5	44.9	0.61 in/h
B-3	Rain Bird PESB-NP-HAN	1-1/2"	Area for Dripline	26.23	41.7	49.7	1.44 in/h
B-4	Rain Bird PESB-NP-HAN	1-1/2"	Turf Rotary	26.3	36.2	44.1	0.3 in/h
B-5	Rain Bird PESB-NP-HAN	1-1/2"	Area for Dripline	35.76	37.8	45.6	1.44 in/h
B-6	Rain Bird PESB-NP-HAN	1-1/2"	Bubbler	36	41.2	49.0	2.18 in/h
B-7	Rain Bird PESB-NP-HAN	1-1/2"	Turf Rotary	30.35	35.8	44.0	0.33 in/h
B-8	Rain Bird PESB-NP-HAN	2"	Turf Rotary	78.92	36.1	44.2	0.59 in/h
B-9	Rain Bird PESB-NP-HAN	1-1/2"	Bubbler	41	35.3	43.0	2.22 in/h
B-10	Rain Bird PESB-NP-HAN	1-1/2"	Area for Dripline	37.93	37.7	45.3	1.44in/h
B-11	Rain Bird PESB-NP-HAN	2"	Turf Rotary	69.68	34.7	41.9	0.56 in/h
B-12	Rain Bird PESB-NP-HAN	2"	Turf Rotary	55.44	36.3	43.4	0.64 in/h
B-13	Rain Bird PESB-NP-HAN	1"	Area for Dripline	9.38	39.3	45.7	1.44 in/h

Michael Flaugh
Digitally signed by Michael Flaugh
Date: 2024.04.29 13:09:43 -04'00'

PSL Project nr: P24-010
100% Plans

Scale:	1" = 20'
Design Date:	01-12-2024
Drawn By:	RT
Last Date: Modified	05-01-2024

Revisions: 1. 2. 3. 4. 5. 6.

SPECIFICATIONS

Marshall Parkway Extension

Port St. Lucie, Florida

NORTH

REGISTERED LANDSCAPE ARCHITECT MICHAEL FLAUGH LA 6778 STATE OF FLORIDA

IR-6
of 6

Project # P24-010