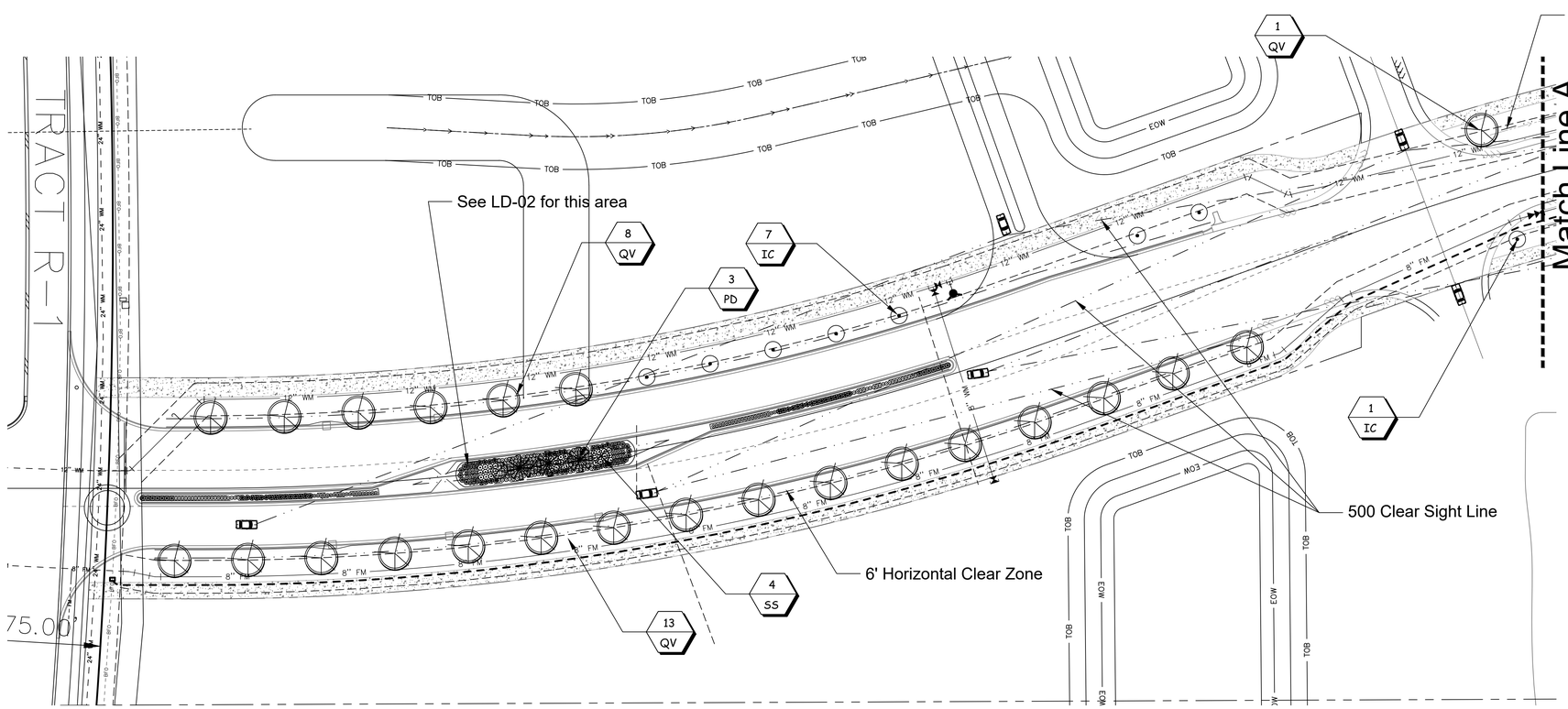


Landscape Data:

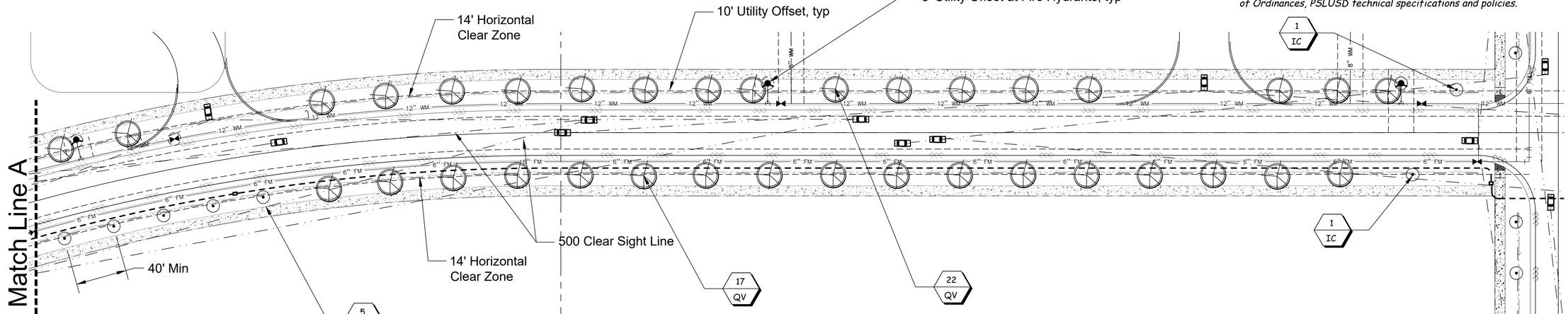
Length of Roadway, 2,100 lf - 587 driveways = 1513
Large Shade Trees, 1 tree/45 lf, 1 per side

Trees Required:	68 trees
Trees Provided:	71 trees

Notes:

1. 7% of the required trees are palm trees.
2. 93% of the required trees are native
3. 23% of the required trees are flowering trees
4. 100% of the required trees are low water use.
5. 100% of the required shrubs are moderate to low water use
6. All sod to be St. Augustine 'Floratam', weed free and laid tight, unless otherwise noted

PSLUSD Notes:
1. No landscape materials other than sod grasses may be planted within a 5' radius maintenance area of any PSLUSD facility such as water meters, backflow devices, fire hydrants, sanitary sewer cleanouts, and manholes, air release valves, etc.
2. All landscaping within PSLUSD utility easements and within ten (10) feet of PSLUD infrastructure shall comply with Chapter 154 of the City's Code of Ordinances and PSLUSD Utility Standards.
3. No landscaping shall be planted in a manner that would adversely affect utility easements. Landscaping shall be in compliance with Chapter 153 of the City of Port S. Lucie Code of Ordinances, PSLUSD technical specifications and policies.



General Notes:

1. All landscape material to be Florida No.1
2. All landscaping meets FDOT clearzone and sight distance criteria.
3. All trees installed within 4' of a hard surface such as sidewalk, curb or building to be installed with 24" rootbarrier per detail on sheet LD-03. Rootbarrier to extend 5' in each direction, measured from center of trunk.

N W E S

Graphic Scale
40 20 0 40
Scale: 1" = 40'

PSLUSD Project No:
City of Port St. Lucie Project No:

Landscape Design Associates
25110 NW 182nd Ave
High Springs, FL 32643
352-210-5765 ph. www.landscapeda.com

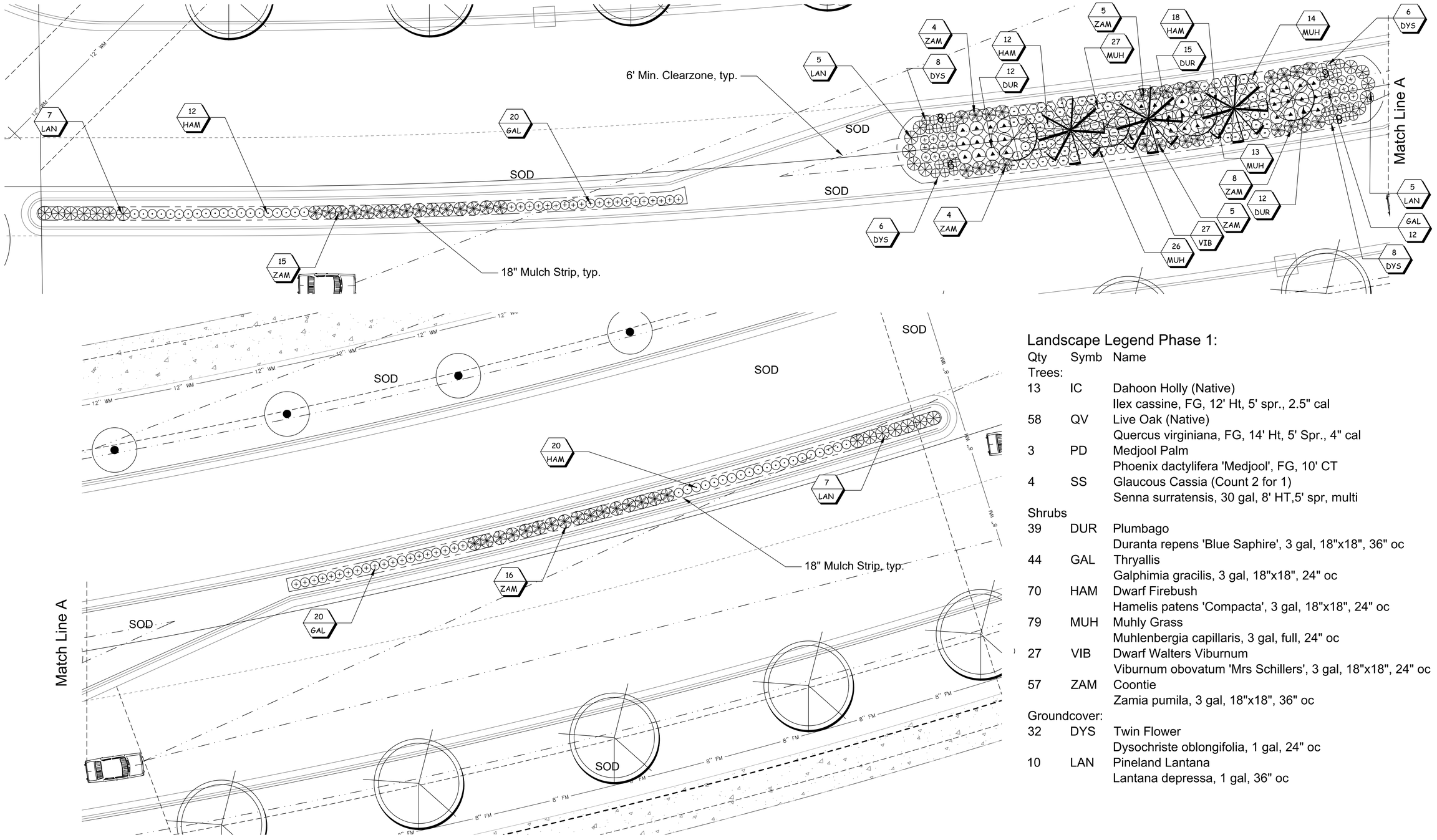
Scale: 1" = 40'
Drawn by: SM
Checked by: SM
CADD No.: 20-124 lp roadway01
Date: 11.25.2020

Revisions
Comments
Date
12.8.21 revised driveways

Legacy Park E-W Road
City of Port St. Lucie
Landscape Plan

LANDSCAPE ARCHITECT Lance Langston LA0001733 STATE OF FLORIDA

12.3.21
LD-01



Landscape Legend Phase 1:

Qty	Symb	Name
Trees:		
13	IC	Dahoon Holly (Native) Ilex cassine, FG, 12' Ht, 5' spr., 2.5" cal
58	QV	Live Oak (Native) Quercus virginiana, FG, 14' Ht, 5' Spr., 4" cal
3	PD	Medjool Palm Phoenix dactylifera 'Medjool', FG, 10' CT
4	SS	Glaucous Cassia (Count 2 for 1) Senna surratensis, 30 gal, 8' HT,5' spr, multi
Shrubs		
39	DUR	Plumbago Duranta repens 'Blue Saphire', 3 gal, 18"x18", 36" oc
44	GAL	Thryallis Galphimia gracilis, 3 gal, 18"x18", 24" oc
70	HAM	Dwarf Firebush Hamelis patens 'Compacta', 3 gal, 18"x18", 24" oc
79	MUH	Muhly Grass Muhlenbergia capillaris, 3 gal, full, 24" oc
27	VIB	Dwarf Walters Viburnum Viburnum obovatum 'Mrs Schillers', 3 gal, 18"x18", 24" oc
57	ZAM	Coontie Zamia pumila, 3 gal, 18"x18", 36" oc
Groundcover:		
32	DYS	Twin Flower Dysochriste oblongifolia, 1 gal, 24" oc
10	LAN	Pineland Lantana Lantana depressa, 1 gal, 36" oc

N W E S

Graphic Scale
10 5 0 10
Scale: 1" = 10'

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Revisions
Date: 12.8.21
Comments: revised driveways

Legacy Park E-W Road
City of Port St. Lucie
Median Landscape Plan

REGISTERED LANDSCAPE ARCHITECT LANDSCAPE LA0001733 STATE OF FLORIDA

12.3.21
LD-02

PLANTING NOTES:

FERTILIZER

FERTILIZERS SHALL BE SLOW RELEASE, UNIFROM IN COMPOSITION, DRY AND FREE FLOWING. THE FERTILIZER SHALL BE DELIVERED TO THE SITE IN THE ORIGINAL UNOPENED BAGS, EACH BEARING THE MANUFACTURERS STATEMENT OF ANALYSIS,AND SHALL MEET THE FOLLOWING REQUIREMENTS: SIX (6) PERCENT NITROGEN,SIX (6) PERCENT PHOSPHOROUS,AND SIX (6) PERCENT POTASSIUM. FERTILIZER SHALL BE APPLIED TO ALL SHRUBS (1/3 LB PER 3 GAL POT, 1/4 LB PER 1 GAL POT) AND GROUNDCOVER. THE SOD STARTER FERTILIZER MIXTURE SHALL BE A 5-10-10 ANALYSIS. A 14-14-14 FERTILIZER ANALYSIS IS REQUIRED ON ALL TREES AND SHRUBS OVER 5' IN HEIGHT (1/2 LB PER 5' OF SPREAD). AGRIFORM TABLETS WITH TWENTY (20) PERCENT NITROGEN, TEN (10) PERCENT PHOSPHOROUS,FIVE (5) PERCENT POTASSIUM IN 21 GRAM SIZES SHALL BE APPLIED ALONG WITH THE FERTILIZER PROCESS (1 WITH 1 GAL PLANTS. 2 WITH 3 GAL PLANTS AND 2 TABLETS PER 1" OF TREE TRUNK CALIPER). MAGNESIUM SULFATE SHALL BE APPLIED TO ALL PALMS AT INSTALLATION AT A RATE OF 1/2 LB PER INCH OF TRUNK CALIPER. MANGANESE SHALL BE APPLIED AT THE SAME RATE.

MULCH

MULCH MATERIAL SHALL BE COLORED 'A' GRADE CERTIFIED RE-CYCLED MULCH AND MOISTENED AT THE TIME OF APPLICATION TO PREVENT WIND DISPLACEMENT. MULCH SHALL BE APPLIED TO A MINIMUM OF 3" DEPTH IN PLANTING BEDS. MULCH SHALL NOT BE PLACED WITHIN 6" OF TREE OR PALM TRUNKS.

SOD

THE SOD SHALL BE CERTIFIED TO MEET FLORIDA STATE PLANT BOARD SPECIFICATIONS,ABSOLUTELY TRUE TO VARIETAL TYPE,AND FREE FROM WEEDS,FUNGUS,INSECTS AND DISEASE OF ANY KIND.

SUBSTITUTIONS

NO SUBSTITUTION OF PLANT MATERIAL TYPES OR SIZES WILL BE ALLOWED WITHOUT WRITTEN AUTHORIZATION FROM THE LANDSCAPE ARCHITECT OF RECORD. CONTAINER GROWN MATERIAL WILL NOT BE ACCEPTED AS A SUBSTITUTE FOR B & B MATERIAL UNLESS PREVIOUSLY APPROVED. INTENDED SUBSTITUTIONS SHALL BE SPELLED OUT IN BID.

MEASUREMENTS

SHADE TREES: HEIGHT SHALL BE MEASURED FROM GROUND TO THE AVERAGE BRANCH HEIGHT OF CANOPY. SPREAD SHALL BE MEASURED TO THE END OF BRANCHING EQUALLY AROUND THE CROWN FROM THE CENTER OF THE TRUNK. MEASUREMENTS ARE NOT TO INCLUDE ANY TERMINAL GROWTH. SINGLE TRUNK TREES SHALL BE FREE OF "V" CROTCHES THAT COULD BE POINTS OF WEAK LIMB STRUCTURE OR DISEASE INFESTATION.

SHRUBS: HEIGHT SHALL BE MEASURED FROM THE GROUND TO THE AVERAGE POINT WHERE MATURE PLANT GROWTH STOPS. SPREAD SHALL BE MEASURED TO THE END OF BRANCHING EQUALLY AROUND THE SHRUB MASS. MEASUREMENT AREA NOT TO INCLUDE ANY TERMINAL GROWTH.

PALMS: CLEAR TRUNK SHALL BE MEASURED FROM THE GROUND AT THE TIME OF INSTALLATION TO THE POINT WHERE THE MATURE AGED TRUNK JOINS THE IMMATURE OR GREEN PORTION OF THE TRUNK OR HEAD.

GREY WOOD (G.W.) - SHALL BE MEASURED FROM THE GROUND AT THE TIME OF INSTALLATION TO TOP OF THE HARDENED TRUNK.

OVERALL HEIGHT (O.A.) - SHALL BE MEASURED FROM THE GROUND AT THE TIME OF INSTALLATION TO THE AVERAGE FROND HEIGHT.

PALMS WITH MARRED OR BURNED TRUNKS WILL NOT BE ACCEPTED.

PLANTING SOIL AND BACKFILL

PLANTING SOIL SHALL BE RECYCLED TOPSOIL.
RECYCLED TOPSOIL SHALL CONSIST OF A STABILIZED MIXTURE OF GROUND YARD TRIMMINGS AND POSSIBLY BIOSOLIDS PROCESSED ACCORDING TO STATE OF FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION GUIDELINES FOR THE PROCESSING AND DISTRIBUTION OF SEWAGE SLUDGE COMPOST. RECYCLED TOPSOIL SHALL ONLY BE OBTAINED FROM A STATE PERMITTED RECYCLING FACILITY WHICH IS ALSO D.O.T. CERTIFIED AND STORES PRODUCT ON A PAD WITH A CURRENT NEMATODE CERTIFICATION FROM FLORIDA DEPARTMENT OF AGRICULTURE. RECYCLED TOPSOIL SHALL HAVE THE FOLLOWING CHARACTERISTICS:
- WEED FREE
- MOISTURE CONTENT 50% BY WEIGHT MAXIMUM
- WATER HOLDING CAPACITY 200% BY WEIGHT MINIMUM
- CARBON TO NITROGEN RATIO LESS THAN 25 TO 1
- ORGANIC MATTER CONTENT 40% BY DRY WEIGHT MINIMUM
- SOLUBLE SALTS LESS THAN 3 MMHOS/CM
- PH RANGE 7.0 - 7.9
- MINIMUM NUTRIENT LEVELS AS FOLLOWS:

MACRO NUTRIENTS: NITROGEN (N) - 1% MINIMUM, WATER INSOLUBLE NITROGEN 90% MINIMUM, PHOSPHORUS (P) - 0.5% MINIMUM, POTASSIUM (K) - 0.2% MINIMUM AND OTHER MACRO AND MICRO NUTRIENTS. THE RECYCLED TOPSOIL SHALL CONTAIN LEVELS OF THOSE MICRO NUTRIENTS NECESSARY FOR PLANT GROWTH. THESE INCLUDE CALCIUM, MAGNESIUM, SULFUR, BORON, COPPER, IRON, MANGANESE AND MOLYBDENUM. RECYCLED TOPSOIL NOT MEETING THESE REQUIREMENTS WILL NOT BE ACCEPTED.

BACKFILL:
ALL NEW AND TRANSPLANTED PLANT MATERIAL (INCLUDING NEW SOD) SHALL BE PLANTED ONLY AFTER PREPARATION OF EXISTING SOIL AS FOLLOWS:
SPREAD A LAYER OF 3" DEPTH OF RECYCLED TOPSOIL (AS DEFINED ABOVE) OVER THE ENTIRE PLANTING AREA. THE TOPSOIL SHALL THEN BE UNIFORMLY DISKED, TILLED OR AERIFIED INTO THE EXISTING SOIL TO A DEPTH OF 12" UNDERNEATH SHRUBS AND GROUNDCOVERS, 6" UNDERNEATH SOD AND TO A DEPTH OF 36" FOR THE TREE PITS, WITH THE FOLLOWING EXCEPTION: NO ROTOTILLING OR DISKING SHALL OCCUR CLOSER TO THE TRUNKS OF ESTABLISHED PLANTS THAN ONE HALF (1/2) THE DISTANCE OF THE CANOPY FURTHER OUT FROM THE DRIP LINE OF THE EXISTING PLANT CANOPY. ALL PLANTS, INCLUDING HEDGES AND GROUND COVER SHALL BE PLANTED IN INDIVIDUALLY DUG HOLES AND THE MATERIAL DUG FROM THE HOLES SHALL THEN BE FURTHER MIXED WITH THE PREPARED SITE SOIL PRIOR TO BACKFILLING OF THE PLANTING HOLES AROUND THE ROOT BALLS. NO ADDITIONAL BACKFILL SOIL SHALL BE USED.

AN EXCEPTION ARE PLANTING PITS FOR CABBAGE PALMS, WHICH SHALL BE BACKFILLED WITH CLEAN NATIVE SAND ONLY.

REMOVE EXCESS MATERIAL TO PROVIDE PROPER FINISHED GRADE.

ALL PLANTING PITS AND PLANTING AREAS SHALL BE AMENDED WITH AGRODIAMONDS @ PER MANUFACTURERS SPECIFICATIONS.

PLANT MATERIALS

TREES, PALMS, SHRUBS,GROUND COVERS:

PLANT SPECIES AND SIZES SHALL CONFORM TO THOSE INDICATED IN THE DRAWINGS. NOMENCLATURE SHALL CONFORM TO STANDARDIZED PLANT NAMES, 1942 EDITION. ALL NURSERY STOCK SHALL BE IN ACCORDANCE WITH GRADES AND STANDARDS FOR NURSERY PLANTS, PARTS I & II, LATEST EDITION PUBLISHED BY THE FLORIDA DEPARTMENT OF AGRICULTURE AND CONSUMER SERVICES, UNLESS SPECIFIED OTHERWISE. ALL PLANTS SHALL BE NORMAL FOR THE VARIETY AND FLORIDA GRADE NUMBER 1 OR BETTER AS DETERMINED BY THE FLORIDA DIVISION OF PLANT INDUSTRY.

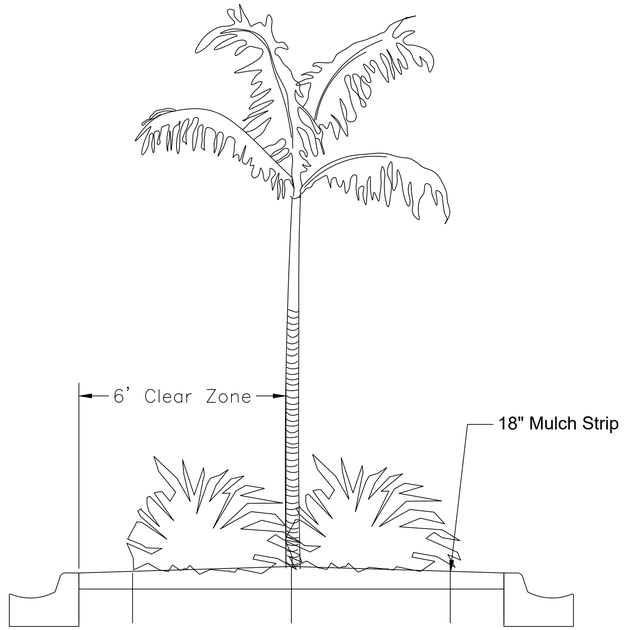
SPECIMEN MEANS AN EXCEPTIONALLY HEAVY, SYMMETRICAL, TIGHTLY KNIT PLANT, SO TRAINED OR FAVORED IN ITS DEVELOPMENT THAT FIRST APPEARANCE IS UNQUESTIONABLE AND IT IS OUTSTANDINGLY SUPERIOR IN FORM, NUMBER OF BRANCHES, COMPACTNESS AND SYMMETRY.

ALL PLANTS SHALL BE FRESHLY DUG, SOUND, HEALTHY, VIGOROUS, WELL BRANCHED AND FREE OF DISEASE AND INSECT EGGS AND LARVAE AND SHALL HAVE ADEQUATE ROOT SYSTEMS. TREES FOR PLANTING ROWS SHALL BE UNIFORM IN SIZE AND SHAPE. ALL MATERIALS SHALL BE SUBJECT TO APPROVAL BY THE LANDSCAPE ARCHITECT, WHERE REQUIREMENTS ARE OMITTED FROM THE PLANT LIST. PLANTS SHALL BE PRUNED PRIOR TO DELIVERY ONLY UPON THE APPROVAL OF THE LANDSCAPE ARCHITECT.

ALL CONTAINER GROWN MATERIAL SHALL BE HEALTHY, VIGOROUS, WELL ROOTED PLANTS AND ESTABLISHED IN THE CONTAINER IN WHICH THEY ARE SOLD. THE PLANTS SHALL HAVE TOPS OF GOOD QUALITY AND BE IN HEALTHY GROWING CONDITION. AN ESTABLISHED CONTAINER GROWN PLANT SHALL BE TRANSPLANTED INTO A CONTAINER AND GROWN IN THAT CONTAINER SUFFICIENTLY LONG ENOUGH FOR THE NEW FIBROUS ROOTS TO HAVE DEVELOPED SO THAT THE ROOT MASS WILL RETAIN ITS SHAPE AND HOLD TOGETHER WHEN REMOVED FROM THE CONTAINER.

GENERAL NOTES:

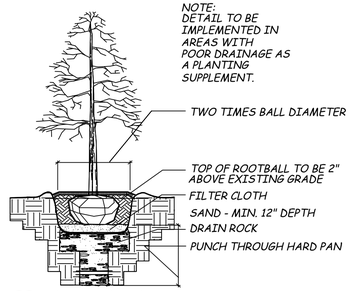
1. THE CONTRACTOR SHALL PERSONALLY ACQUAINT HIM/HER SELF WITH THE EXISTING SITE CONDITIONS AND THE EXTENT AND SCOPE OF WORK REQUIRED.
2. THE PLANT LIST INDICATES THE NAMES, SIZES AND SPACING OF SPECIFIC PLANT MATERIALS. QUANTITIES HAVE BEEN PROVIDED TO THE CONTRACTOR AS A CONVENIENCE, THE CONTRACTOR IS RESPONSIBLE FOR HIS/HER OWN QUANTITY COUNT. IN CASE OF DISCREPANCIES BETWEEN THE DRAWINGS AND PLANT LIST, THE QUANTITIES ON THE DRAWINGS SHALL PREVAIL.
3. NO SUBSTITUTES ON VARIETIES LISTED WILL BE ALLOWED WITHOUT WRITTEN APPROVAL FROM LANDSCAPE ARCHITECT.
4. PLANTS SHALL BE WATERED AS NECESSARY OR WITHIN 24 HOURS AFTER NOTIFICATION BY THE LANDSCAPE ARCHITECT.
5. THE LOCATIONS OF PLANTS, AS SHOWN IN THESE PLANS, ARE APPROXIMATE. THE FINAL LOCATIONS MAY BE ADJUSTED TO ACCOMMODATE UNFORESEEN FIELD CONDITIONS. MAJOR ADJUSTMENTS TO THE LAYOUT ARE TO BE APPROVED BY THE LANDSCAPE ARCHITECT OF RECORD.
6. ALL PLASTIC FABRIC SHALL BE REMOVED FROM PLANT MATERIAL AT TIME OF INSTALLATION.
7. ALL TREES MUST BE STAKED AS SHOWN ON THE LANDSCAPE DETAIL SHEET WITHIN 24 HRS OF PLANTING. STAKES TO REMAIN FOR A MINIMUM OF 12 MONTH BUT NO LONGER THAN 18 MONTH. CONTRACTOR RESPONSIBLE FOR MAINTENANCE AND REMOVAL OF THE STAKES.
8. ALL TREES MUST BE PRUNED AS PER LANDSCAPE ARCHITECT DIRECTION.
9. ALL SOD EDGES SHALL BE TRIMMED AS PER THE LANDSCAPE ARCHITECTS DIRECTION.
10. ALL SHRUBS, TREES, GROUNDCOVERS, SOD AND WILDFLOWER AREAS SHALL HAVE IMPROVED SOIL AS PER PLANTING SOIL NOTES.
11. DO NOT ALLOW AIR POCKETS TO FROM WHEN BACKFILLING.
12. SOAK PLANTS IMMEDIATELY WITH WATER FOLLOWING PLANTING.
13. MAINTAIN THE ORIGINAL GRADE OF THE TREE BASE.
14. DO NOT BREAK ROOTBALL.
15. ALL PLANT SHALL BE HARDY UNDER CLIMATIC CONDITIONS SIMILAR TO THOSE ON LOCALITY OF THE PROJECT.
16. THE LANDSCAPE CONTRACTOR SHALL WATER, MULCH, WEED, PRUNE,, AND OTHERWISE MAINTAIN ALL PLANTS, INCLUDING SOD, UNTIL COMPLETION OF THE CONTRACT OR ACCEPTANCE BY THE LANDSCAPE ARCHITECT. SETTLED PLANTS SHALL BE RESET TO PROPER GRADE, PLANTING SAUCERS RESTORED, AND DEFECTIVE WORK CORRECTED.
17. THE LANDSCAPE CONTRACTOR SHALL AT ALL TIMES KEEP THE PREMISES FREE FROM ACCUMULATION OF WASTE MATERIALS OR DEBRIS CAUSED BY THE CREWS DURING THE PERFORMANCE OF THE WORK. UPON COMPLETION OF THE WORK, THE CONTRACTOR SHALL PROMPTLY REMOVE ALL WASTE MATERIALS, DEBRIS, UNUSED PLANT MATERIAL, EMPTY PLANT CONTAINERS AND ALL EQUIPMENT FROM THE PROJECT SITE.
18. UPON COMPLETION OF THE WORK, THE LANDSCAPE CONTRACTOR SHALL NOTIFY THE LANDSCAPE ARCHITECT AND REQUEST A FINAL INSPECTION. ANY ITEMS THAT ARE JUDGED INCOMPLETE OR UNACCEPTABLE BY THE LANDSCAPE ARCHITECT OR REPRESENTATIVE SHALL BE PROMPTLY CORRECTED BY THE LANDSCAPE CONTRACTOR.
19. THE LANDSCAPE CONTRACTOR SHALL GUARANTEE ALL PLANT MATERIAL FOR A PERIOD OF ONE (1) YEAR FROM THE DATE OF FINAL ACCEPTANCE IN WRITING FROM THE LANDSCAPE ARCHITECT. AT THE TIME OF FINAL ACCEPTANCE THE ONE (1) YEAR PERIOD SHALL COMMENCE. ANY MATERIALS WHICH HAVE DIED DURING THIS PERIOD SHALL BE PROMPTLY REPLACED WITH SPECIMENS THAT MEET THE MINIMUM REQUIREMENTS CALLED FOR IN THE DRAWINGS. THE LANDSCAPE CONTRACTOR SHALL NOT BE HELD RESPONSIBLE FOR THE DEATH OR DAMAGE RESULTING FROM LIGHTNING, VANDALISM, AUTOMOBILES OR FROM NEGLIGENCE BY THE OWNER. CONTRACTOR SHALL BE RESPONSIBLE FOR WATERING AND OTHERWISE MAINTAINING PLANTS DURING THE GUARANTEE PERIOD UNLESS A WRITTEN AGREEMENT WITH THE LANDSCAPE ARCHITECT PROVIDES FOR A DIFFERENT ARRANGEMENT.
20. ALL LABOR AND MATERIAL FOR SOIL AMENDMENTS AND FERTILIZER THAT IS REQUIRED TO INSURE THE SUCCESSFUL ESTABLISHMENT AND SURVIVAL OF THE PROPOSED VEGETATION AS WELL AS ALL COST FOR THE REMOVAL OF UNSUITABLE OR EXCESS BACKFILL MATERIAL SHALL BE INCLUDED IN THE CONTRACTORS BID TO PERFORM THE WORK PRESENTED IN THIS PLAN SET.
21. NO LANDSCAPING ADDED UNDER THIS PROJECT SHALL BE LOCATED SUCH THAT SAID LANDSCAPING OBSCURES MOTORIST'S VISIBILITY OF ANY EXISTING SIGN(S).



MEDIAN LANDSCAPE PLANTING
N.T.S.

WATERING SCHEDULE

APPLICATION SCHEDULE	
PALM TREES	20 GAL/APPLICATION/PLANT
LARGE TREES	30 GAL/APPLICATION/PLANT
SMALL TREES	20 GAL/APPLICATION/PLANT
LARGE SHRUBS	10 GAL/APPLICATION/PLANT
SMALL SHRUBS	5 GAL/APPLICATION/PLANT
GROUNDCOVER	5 GAL/APPLICATION/PLANT
APPLICATION AMOUNT	
MONTH 1	12 APPLICATIONS
MONTH 2	12 APPLICATIONS
MONTH 3	8 APPLICATIONS
MONTH 4	8 APPLICATIONS
MONTH 5	5 APPLICATIONS
TOTAL:	45 APPLICATIONS

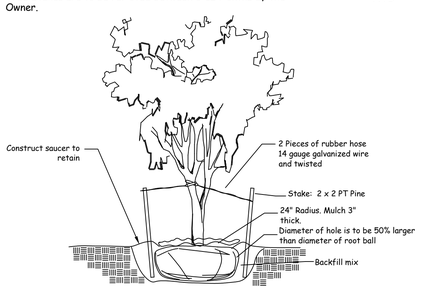


TREE PITS WITH DRAIN
N.T.S.

ABBREVIATIONS:
C.T.- CLEAR TRUNK
Ht.- HEIGHT
O.C.- ON CENTER
Spr.- SPREAD

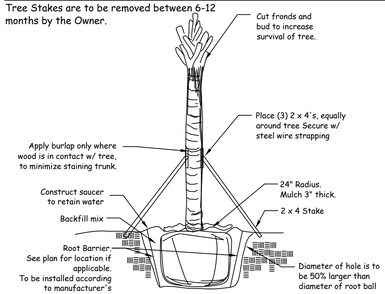
Tree Planting Detail

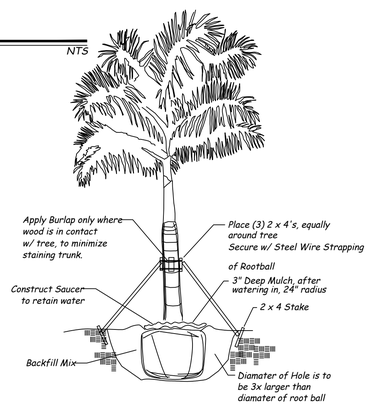
Tree Stakes are to be removed between 6-12 months by the Owner. NTS



Palm Planting Detail

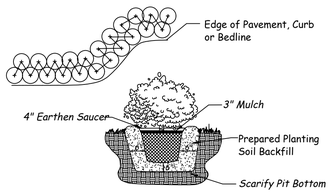
Tree Stakes are to be removed between 6-12 months by the Owner. NTS





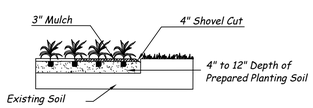
Shrub & Groundcover Planting Detail

Note: All Shrubs And Groundcover Shall Be Triangular Spaced Along Straight Edges And Will Be Planted In Parallel Rows Along Curved Edges. NTS



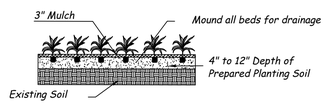
Planting Edge at Sod Detail

NTS



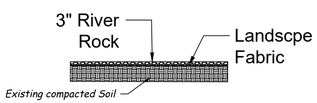
Groundcover & Annual Detail

NTS NOTE: Annuals Are To Be Planted As Per Groundcover Detail Excluding Mulch.



Gravel Strip Detail

NTS



PSLUSD Project No:

City of Port St. Lucie Project No:

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352-210-5765 ph. www.landscapeda.com

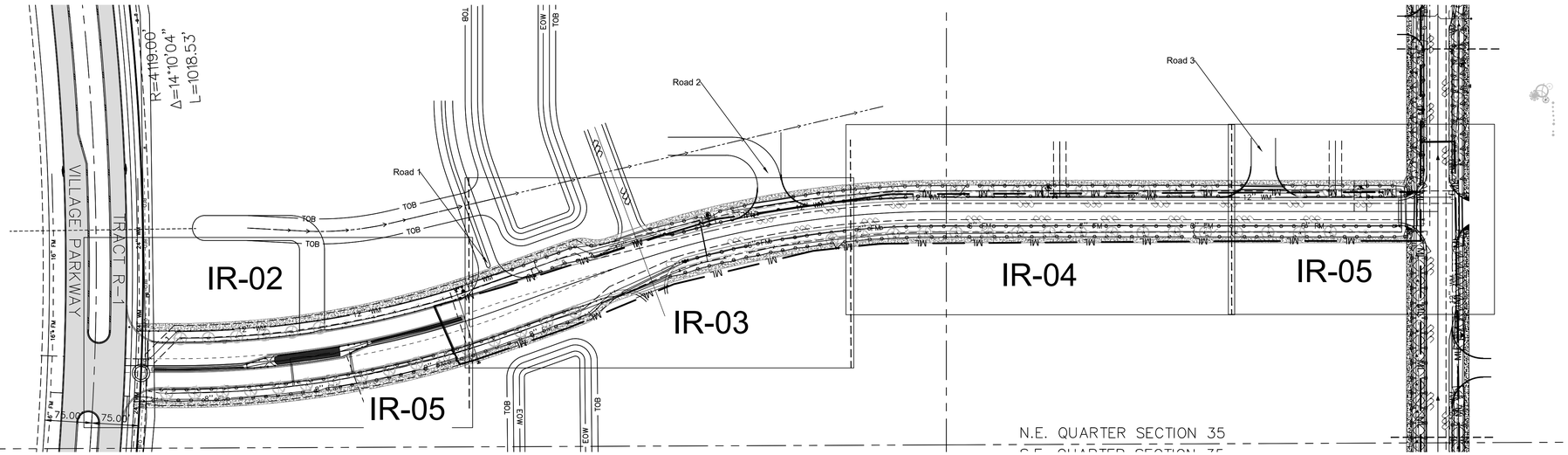
Scale: NTS
Drawn by: SM
Checked by: SM
CADD No.: 20-124 lp roadway01
Date: 11.25.2020

Revisions
Date | Comments

LANDSCAPE ARCHITECT LA0001733 STATE OF FLORIDA

Legacy Park E-W Road
City of Port St. Lucie
Landscape Notes & Details

12.3.21
LD-03



Note:

1. All components, solvent welds, pipe to meet City of Port St. Lucie Specifications. City specifications override any other specifications.

2. If the contractor wants to use a 2-wire system, a decoder is to be included with every valve (or groups of valves if next to each other) - and the governing requirements become manufacturer specifications for Rain Bird, Hunter, Toro, etc., 2-wire systems.

N
W E
S

Graphic Scale
100 50 0 100
Scale: 1" = 100'

PSLUSD Project No: 5360

City of Port St. Lucie Project No: P20-171

Landscape Design Associates
25110 NW 182nd Ave
High Springs, FL 32643
352-210-5765 ph. www.landscapeda.com

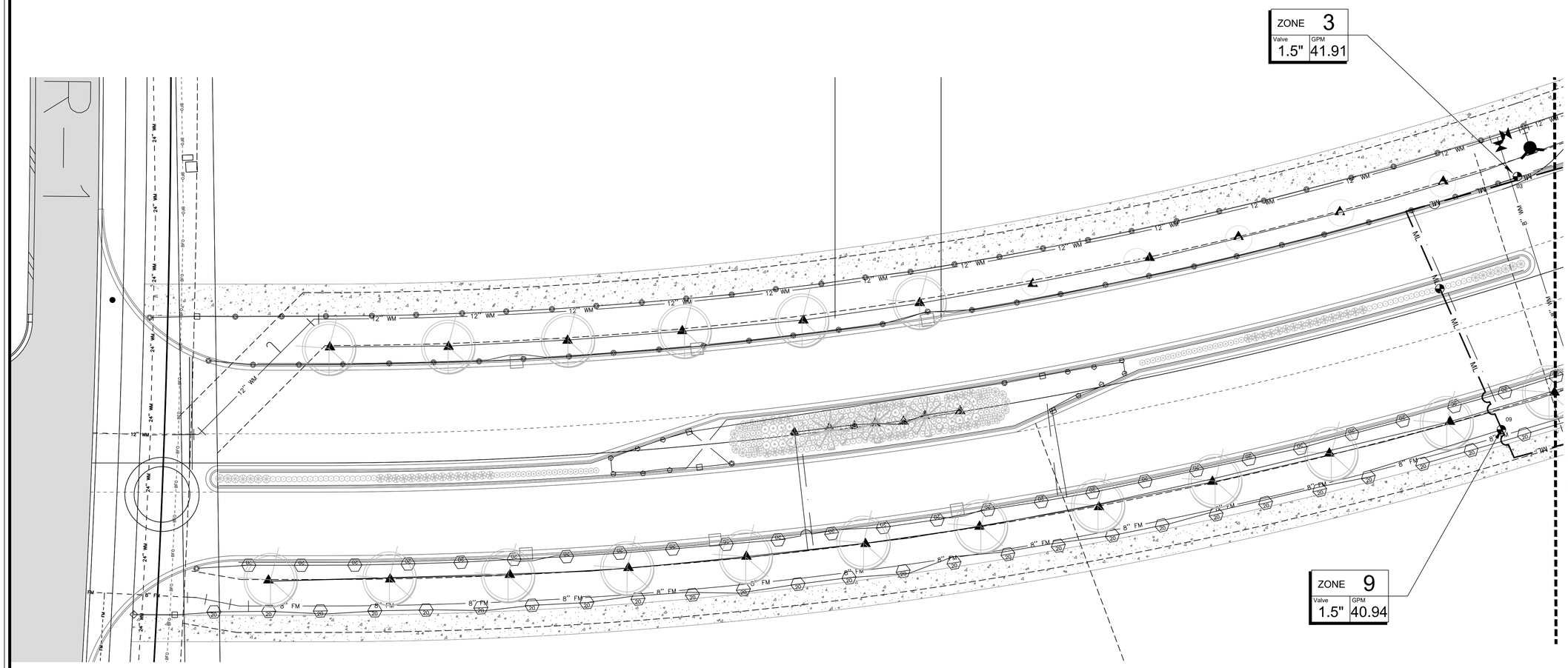
Revisions
Date | Comments

Scale: 1" = 100'
Drawn by: SM
Checked by: SM
CADD No.: 20-124 ir roadway01
Date: 10/12/2021

Legacy Park E-W Road
City of Port St. Lucie
Irrigation Plan Overview

REGISTERED LANDSCAPE ARCHITECT
LA0001733
STATE OF FLORIDA

12.8.21
IR-01



Legend

- 1.5" Valve — Rain Bird PESB Valve
- ML ML ML — 4" Main line HDPE
- Lateral Line PVC Class 200
- Class 200 Sleeve

- Bubbler
- 7HC
- 10HC
- 12QC
- 12HC
- 17QC
- 17HC
- 24 QC
- 24 HC
- EST
- CST

N W E S

Graphic Scale
20 10 0 20
Scale: 1" = 20'

PSLUSD Project No: 5360
City of Port St. Lucie Project No: P20-171

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Drawn by:	SM
Checked by:	SM
CADD No.:	20-124 ir roadway01
Date:	10/12/2021

Revisions
Date | Comments

Legacy Park E-W Road
City of Port St. Lucie
Irrigation Plan - Bubblers, Spray

REGISTERED LANDSCAPE ARCHITECT LA0001733 STATE OF FLORIDA

12.6.21
IR-02

Match Line IR-03

ZONE 1
Valve 1.5" | GPM 41

ZONE 8
Valve 1.5" | GPM 42.50

ZONE 7
Valve 1.5" | GPM 43.68

Match Line IR-04

Legend

- 2" Valve — Rain Bird PESB Valve
- ML ML ML — 4" Main line HDPE
- Lateral Line PVC Class 200
- Class 200 Sleeve

- Bubbler
- 7HC
- 10HC
- 12QC
- 12HC
- 17QC
- 17HC
- 24 QC
- 24 HC
- EST
- CST

N W E S

Graphic Scale
20 10 0 20
Scale: 1" = 20'

PSLUSD Project No: 5360
City of Port St. Lucie Project No: P20-171

Landscape Design Associates
25110 NW 182nd Ave
High Springs, FL 32643
352-210-5765 ph. www.landscapeda.com

Scale: 1" = 20'
Drawn by: SM
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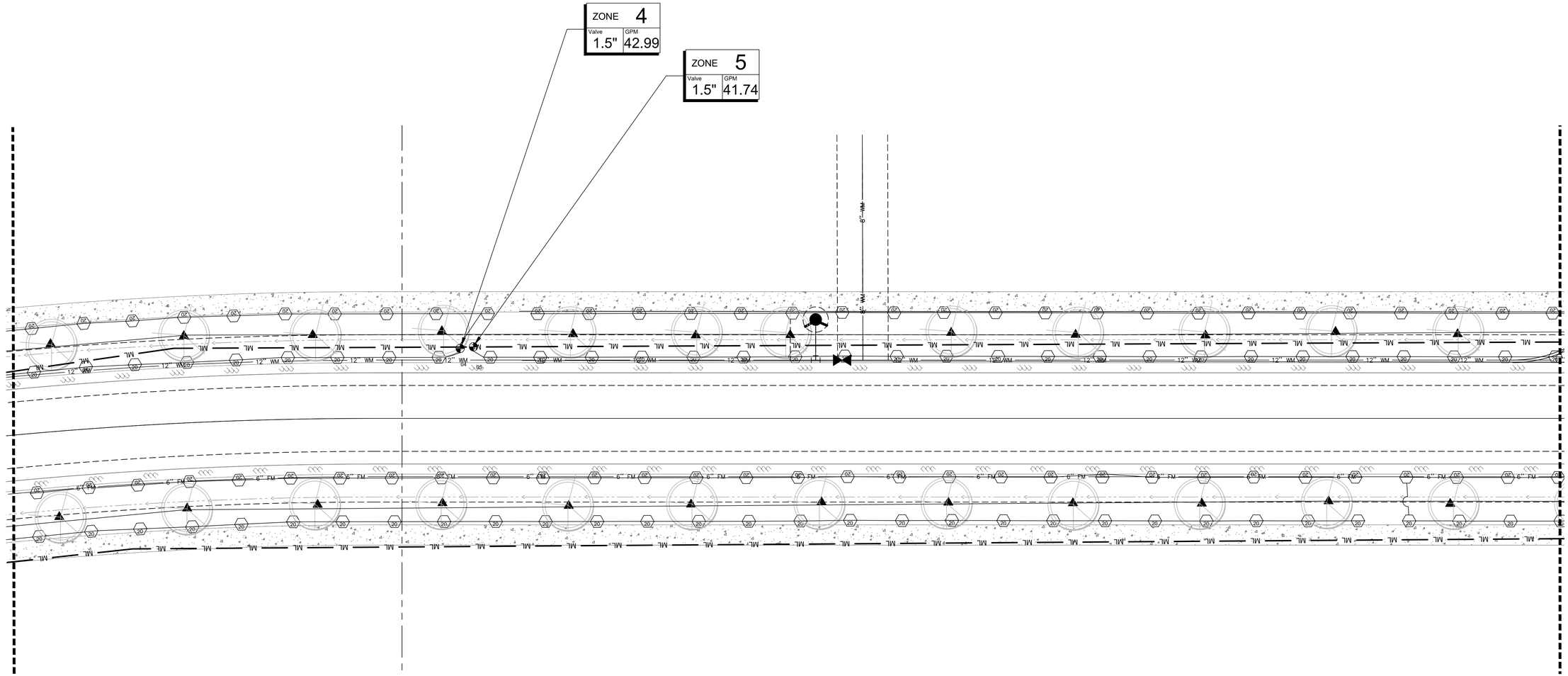
CADD No.: 20-124 ir roadway01
Date: 10/12/2021

Revisions
Date | Comments

Legacy Park E-W Road
City of Port St. Lucie
Irrigation Plan - Bubblers & Spray

REGISTERED LANDSCAPE ARCHITECT LA0001733 STATE OF FLORIDA

12.6.21
IR-03



Legend

- 1.5 " Valve — Rain Bird PESB Valve
- ML — 4" Main line HDPE
- Lateral Line PVC Class 200
- Class 200 Sleeve

- Bubbler
- 7HC
- 10HC
- 12QC
- 12HC
- 17QC
- 17HC
- 24 QC
- 24 HC
- EST
- CST

N W E S

Graphic Scale
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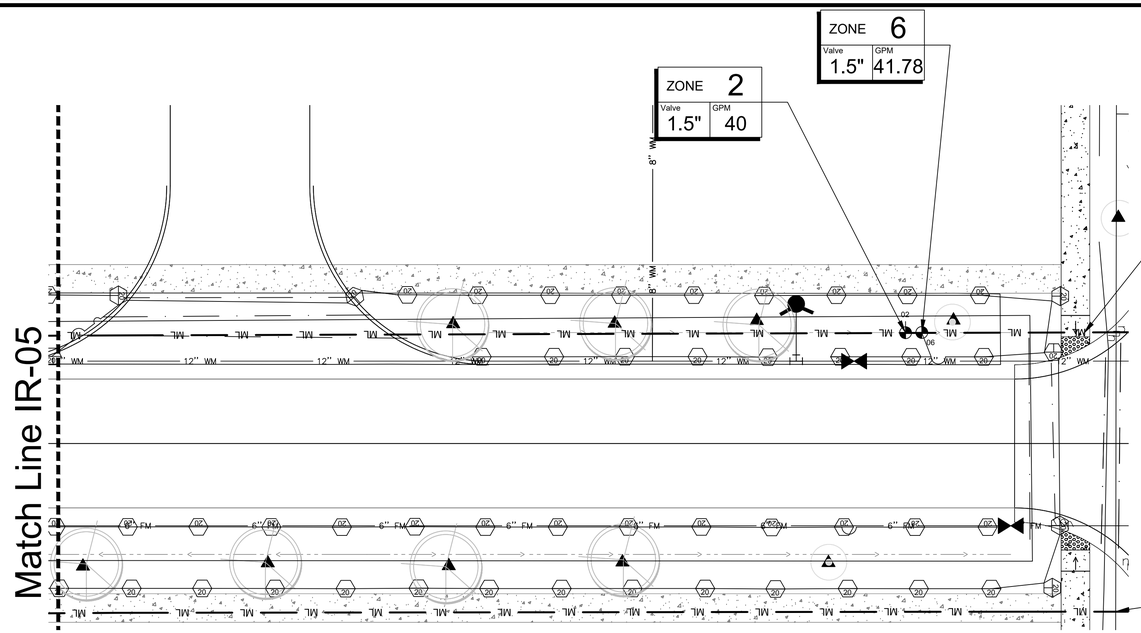
Revisions
Date | Comments

Legacy Park E-W Road
City of Port St. Lucie
Irrigation Plan - Bubblers & Spray

LANDSCAPE ARCHITECT LANGLEY LA0001733 STATE OF FLORIDA

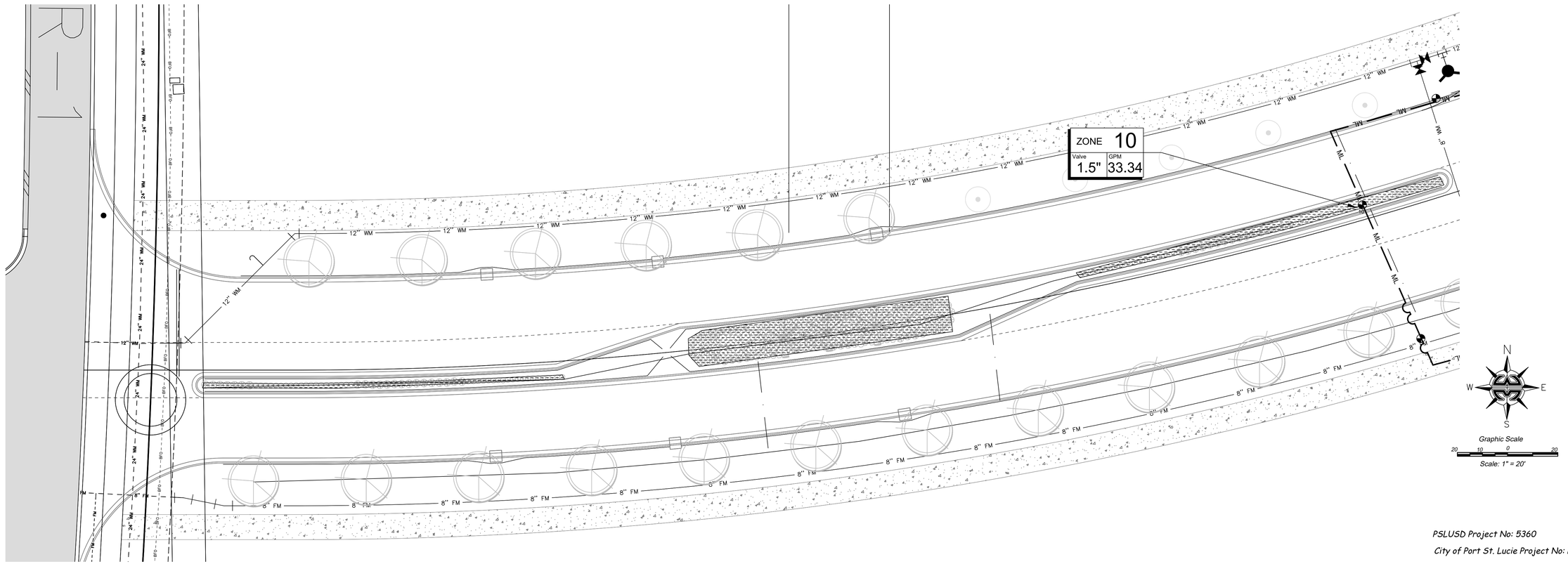
12.6.21
IR-04



Legend

- 1.5" Valve — Rain Bird PESB Valve
- ML ML ML — 4" Main line HDPE
- Lateral Line PVC Class 200
- Class 200 Sleeve

- Bubbler
- 7HC
- 10HC
- 12QC
- 12HC
- 17QC
- 17HC
- 24 QC
- 24 HC
- EST
- CST



Graphic Scale
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Scale: 1" = 20'

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Legacy Park E-W Road
City of Port St. Lucie
Irrigation Plan - Bubblers, Spray, Drip

REGISTERED LANDSCAPE ARCHITECT
LA0001733
STATE OF FLORIDA

12.6.21
IR-05

— ML — 4 " PVC Class 200 Irrigation Main Line

Sprays	Qty	GPM	T Flow (GPM)	Run Time	Gallons	Manufacturer	Type	Pattern
▲ Bubbler	81	1.00	81.00	0:20	1620	Rainbird ® 1400 Series	1804 SAM	Umbrella Pattern
10HC	18	0.32	5.76	0:40	230	Hunter® MP1000	6" Pop-Up	10' R Half Circle (180)
12HC	5	0.32	1.60	0:40	64	Hunter® MP1000	6" Pop-Up	12' R Half Circle (180)
15QC	5	0.22	1.10	0:40	44	Hunter® MP1000	6" Pop-Up	15' R Part Circle (90)
15HC	4	0.43	1.72	0:40	69	Hunter® MP1000	6" Pop-Up	15' R Half Circle (180)
17QC	5	0.31	1.55	0:40	62	Hunter® MP2000	6" Pop-Up	17' R Part Circle (90)
17HC	71	0.63	44.73	0:40	1789	Hunter® MP2000	6" Pop-Up	17' R Half Circle (180)
20 QC	9	0.4	3.60	0:40	144	Hunter® MP3000	6" Pop-Up	20' R Part Circle (90)
20 HC	303	0.78	236.34	0:40	9454	Hunter® MP3000	6" Pop-Up	20' R Half Circle (180)
24 QC	2	0.69	1.38	0:40	55	Hunter® MP3000	6" Pop-Up	24' R Part Circle (90)
24 HC	2	1.44	2.88	0:40	115	Hunter® MP3000	6" Pop-Up	24' R Half Circle (180)
EST	2	0.22	0.44	0:40	18	Hunter® MPLCS(R)515	6" Pop-Up	15' Square Pattern
CST	1	0.44	0.44	0:40	18	Hunter® MPSS530	6" Pop-Up	30' Square Pattern
Total	497		873.54		13,442			

Drip	Qty	GPM	T Flow (GPM)	Run Time	Gallons	Manufacturer
Total	2179	1.53/100'	33.34	0:45	1,500	Netafim Dripline, 0.9 gph emitters, emitter spacing 12",spaced 12" apart

Irrigation Zone List

Zone #	GPM	Valve	Type	Zone #	GPM	Valve	Type
1	41	1.5"	Bubbler	6	42	1.5"	Spray
2	40	1.5"	Bubbler	7	44	1.5"	Spray
3	42	1.5"	Spray	8	43	1.5"	Spray
4	42	1.5"	Spray	9	41	1.5"	Spray
5	42	1.5"	Spray	10	33	1.5"	Drip

Average Water Output: 41 GPM
Run time Method: Full Site in 8h Window
Irrigation Main Line: 4 " HDPE

Zone Type and Count	Qty	Run Time
Bubbler:	2	0:40
Spray:	7	4:40
Drip:	1	0:45
TOTAL	10	6:05

PSLUSD Project No: 5360
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Legacy Park E-W Road
City of Port St. Lucie
Irrigation Legend

REGISTERED LANDSCAPE ARCHITECT LA0001733 STATE OF FLORIDA

12.6.21
IR-06

IRRIGATION NOTES & SPECIFICATIONS

Irrigation design based on the Landscape Design Associates Landscape Plan dated 10.14.21. Contractor shall refer to these plans to coordinate sprinkler and pipe locations.

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

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

THE WORK

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

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

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

It is the responsibility of the irrigation contractor to familiarize themselves with all grade differences, location of walls, retaining walls, structures and utilities. Do not willfully install the sprinkler system as shown on the drawings when it is obvious in the field that unknown obstruction, grade differences or differences in the area dimensions exist that might not have been considered in the engineering. Such obstructions, or differences, should be brought to the attention of the owner' 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.)

The P.O.C. is an existing Hoover Pump Station to provide water out of the lake. The P.O.C. must be capable of delivering a minimum of 100 GPM at 60 PSI.

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

THE PIPE

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

All pipes are to always be placed in planting beds. If it is necessary to have piping under hardscapes, such as roads, walks, and patios, the pipes must be sleeved using Class 200 PVC with the sleeve diameter being twice the size of the pipe it is carrying with a minimum sleeve size of 2".

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

Mainline to be DR11–4710 IPS H.D.P.E. MAINLINE WITH FUSION–WELD FITTINGS (SIZE PER PLAN)

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: To meet city of Port St. Lucie requirements; slow–drying, heavy duty cement and tinted (purple) primer that is compatible with the cement. The PVC cement shall be Weld–On 2711 grey and the primer shall be Weld–On P70 purple primer, or approved equals.

ELECTRICAL POWER SUPPLY

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

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

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 3/4" piece of PVC pipe to make a coil using 30 linear inches of wire. Make electrical connections with 3M–DBY,DBR connectors.

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

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

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

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

LAYOUT

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

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

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

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

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

VALVES

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

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

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

EQUIPMENT

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

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

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

TRENCHING

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

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

INSTALLATION

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

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

BACK FILL

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

Main line pipe depth measured to the top of pipe shall be 18" minimum, and 30" at vehicular crossings.

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

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

FLUSHING

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

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

TESTING

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

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

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

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

SUBMITTALS

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

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

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

Furnish extra materials described below that match products installed and that are packaged with protective COVERing for storage and identified with labels describing contents. Include tools to service these products.
1. Sprinkler Units: Five of each unit for each type and size installed, but no fewer than two units.
2. Emitter Units: Five of each unit for each type and size installed, but no fewer than two units.
3. Drip Tube Units: Five of each unit for each type and size installed, but no fewer than two units.

FINAL ACCEPTANCE

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

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

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

MINIMUM RECOMMENDED IRRIGATION MAINTENANCE PROCEDURES

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

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

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

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

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

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

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

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

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

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

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

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

PSLUSD Project No: 5360

City of Port St. Lucie Project No: P20-171

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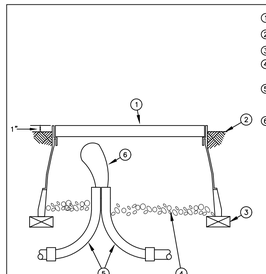
Scale: NTS
Drawn by: SM
Checked by: SM
CADD No.: 20-124 ir roadway01
Date: 10/12/2021

Revisions	
Date	Comments

Legacy Park E-W Road
City of Port St. Lucie
Irrigation Notes

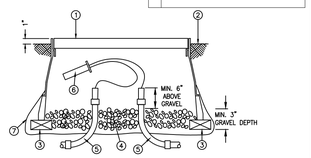
12.6.21
IR-07



1. PULL BOX WITH COVER 12 INCH SIZE
2. FINISH GRADE–TOP OF MULCH
3. BRICK (1 OF 4)
4. 3.0–INCH MINIMUM DEPTH OF 3/4–INCH WASHED GRAVEL
5. 1–1/2" GRAY PVC ELECTRICAL CONDUIT WITH LONG RADII SWEEPS
6. PE–39 CONTROL WIRE (TYP.) 2.0' LOOP MINIMUM

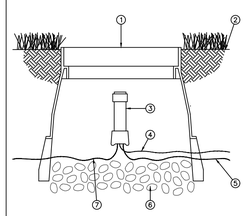
PE–39 CONTROL WIRE PULL BOX

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



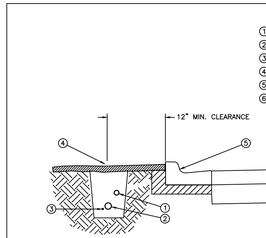
1. CARSON 1017 BOX WITH BOLT DOWN LID
2. FINISH GRADE/TOP OF MULCH
3. BRICK (1 OF 4)
4. 3.0–INCH MINIMUM DEPTH OF 3/4–INCH WASHED GRAVEL
5. LOW VOLTAGE CONTROL WIRE (TYP.) IN 1–1/2" GREY PVC ELECTRICAL CONDUIT WITH LONG RADII SWEEPS
6. 3M DBR/Y–6 WATER PROOF CONNECTOR (TYP.)
7. SB3 LANDSCAPE FABRIC TO BE DUCT TAPED TO VALVE BOX EXTERIOR.

WIRE SPLICE



1. VALVE BOX AND COVER
2. FINISH GRADE
3. WIRE SPLICE KIT: PREFORMED LINE PRODUCTS SUPER SERVISEAL CLOSURE
4. CABLE FROM OPTIONAL TAP SPLICE
5. CABLE TO FIELD
6. 3–INCH MINIMUM DEPTH OF 3/4–INCH WASHED GRAVEL
7. CABLE FROM SOURCE

PE–39 WIRE SPLICE

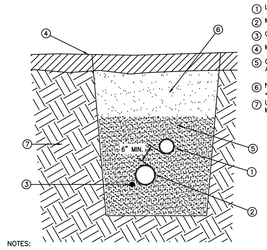


1. LATERAL PIPE
2. MAIN LINE
3. CONTROLLER WIRE
4. MULCH OR TURF
5. CURB
6. STREET

NOTES:

BACKFILL MINIMUM DEPTHS:
1. MAIN LINE – 24"
2. LATERAL PIPE – 18"

MAINLINE AND LATERAL PIPING DETAIL

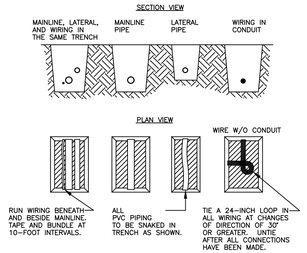


1. LATERAL PIPE
2. MAIN LINE
3. CONTROLLER WIRE
4. MULCH OR TURF
5. CLEAN SAND > #6" AROUND ALL PIPES
6. NATIVE MATERIAL <2" IN DIAMETER
7. UNDISTURBED MATERIAL

NOTES:

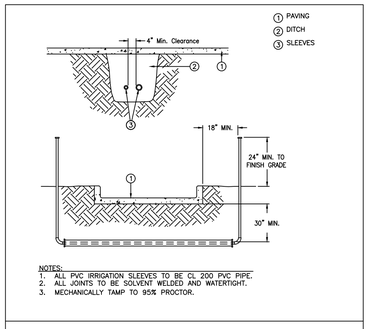
BACKFILL MINIMUM DEPTHS:
1. MAIN LINE – 24"
2. LATERAL PIPE – 18"
THERE SHALL BE A MINIMUM OF 6" BACKFILL BETWEEN ADJACENT PIPES/CONDUIT

MAINLINE AND LATERAL BACKFILL DETAIL



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.

PIPE AND WIRE TRENCHING



1. PAVING
2. DITCH
3. SLEEVES

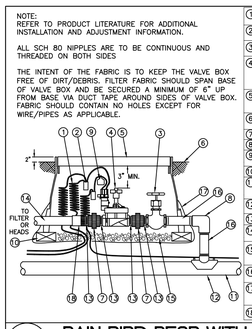
NOTES:
1. ALL PVC IRRIGATION SLEEVES TO BE CL 200 PVC PIPE.
2. ALL JOINTS TO BE SOLVENT WELDED AND WATERTIGHT.
3. MECHANICALLY TAMP TO 95% PROCTOR.

SLEEVING

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

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

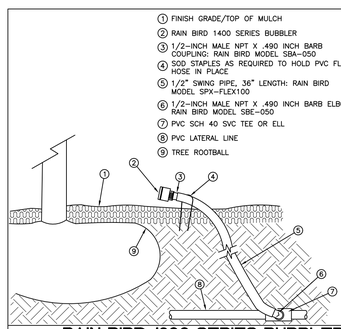
THE INTENT OF THE FABRIC IS TO KEEP THE VALVE BOX FREE OF DIRT/DEBRIS. FILTER FABRIC SHOULD SPAN BASE OF VALVE BOX AND BE SECURED A MINIMUM OF 6" UP FROM BASE VIA DUCT TAPE AROUND SIDES OF VALVE BOX. FABRIC SHOULD CONTAIN NO HOLES EXCEPT FOR WIRE/PIPES AS APPLICABLE.



1. 30–INCH LINEAR LENGTH OF WIRE COILED.
2. 3M DBR/Y–6 CONNECTORS PER MANUFACTURER SPEC
3. NIBCO T–113 BRONZE GATE VALVE
4. REMOTE CONTROL VALVE: RAIN BIRD PESB (SIZE PER IRRIGATION LEGEND)
5. CARSON 1220 JUMBO VALVE BOX W/ BOLT DOWN LID
6. FINISH GRADE/TOP OF MULCH
7. SCH 80 PVC UNION
8. PVC SCH 80 ELL
9. CHRISTY I.D. TAG (STATION/CONTROLLER)
10. COMMON BRICK (1 OF 4)
11. HDPE IRRIGATION MAINLINE – SIZE AS SPECIFIED
12. LINE SIZE X 2" SDD TRANSITION SADDLE ELECTROFUSION FITTING
13. PVC SCH 80 CLOSE NIPPLE
14. SOLVENT WELDED PVC LATERAL PIPE
15. 3.0–INCH MINIMUM DEPTH OF 3/4–INCH WASHED GRAVEL
16. PVC SCH 80 NIPPLE (SIZE AS REQUIRED)
17. SB3 LANDSCAPE FABRIC TO BE DUCT TAPED TO VALVE BOX EXTERIOR.
18. PVC SCH 80 THREADED X SUP. FEMALE ADAPTER

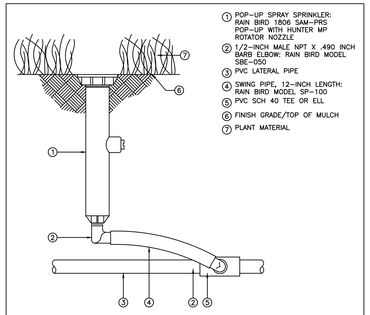
B

RAIN BIRD PESB WITH GATE VALVE ON HDPE MAINLINE



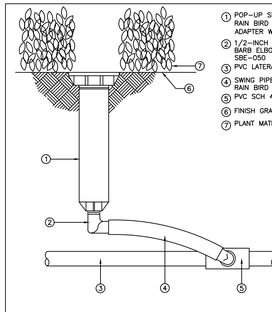
1. FINISH GRADE/TOP OF MULCH
2. RAIN BIRD 1400 SERIES BUBBLER
3. 1/2–INCH MALE NPT X .490 INCH BARB COUPLING: RAIN BIRD MODEL SBA–050
4. SOD STAPLES AS REQUIRED TO HOLD PVC FLEX HOSE IN PLACE
5. 1/2" SWING PIPE, 36" LENGTH: RAIN BIRD MODEL SPX–FLEX100
6. 1/2–INCH MALE NPT X .490 INCH BARB ELBOW: RAIN BIRD MODEL SBE–050
7. PVC SCH 40 SVC TEE OR ELL
8. PVC LATERAL LINE
9. TREE ROOTBALL

RAIN BIRD 1800 SERIES BUBBLER ON POLY PIPE



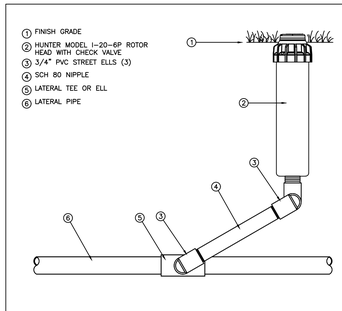
1. POP–UP SPRAY SPRINKLER: RAIN BIRD 1806 SAM–PRS POP–UP WITH HUNTER MP ROTATOR NOZZLE
2. 1/2–INCH MALE NPT X .490 INCH BARB ELBOW: RAIN BIRD MODEL SBE–050
3. PVC LATERAL PIPE
4. SWING PIPE, 12–INCH LENGTH: RAIN BIRD MODEL SP–100
5. PVC SCH 40 TEE OR ELL
6. FINISH GRADE/TOP OF MULCH
7. PLANT MATERIAL

RAIN BIRD 1806 SAM–PRS SPRAY



1. POP–UP SPRAY SPRINKLER: RAIN BIRD 1804–SAM W/PA–80 ADAPTER W/1401 BUBBLER
2. 1/2–INCH MALE NPT X .490 INCH BARB ELBOW: RAIN BIRD MODEL SBE–050
3. PVC LATERAL PIPE
4. SWING PIPE, 12–INCH LENGTH: RAIN BIRD MODEL SP–100
5. PVC SCH 40 TEE OR ELL
6. FINISH GRADE/TOP OF MULCH
7. PLANT MATERIAL

RAIN BIRD 1804–SAM POP–UP WITH 1401 BUBBLER



1. FINISH GRADE
2. HUNTER MODEL I–20–6P ROTOR HEAD WITH CHECK VALVE
3. 3/4" PVC STREET ELLS (3)
4. SCH 80 NIPPLE
5. LATERAL TEE OR ELL
6. LATERAL PIPE

HUNTER I–20–6P W/CHECK VALVE

HIGH DENSITY POLYETHYLENE PIPE AND FITTINGS
(DR 11 4710)

PART 1 - GENERAL

1.1 DESCRIPTION

A. The contractor shall provide solid wall high density polyethylene pipelines which conform to AWWA, and ASTM standards and other reference documents listed under Section 1.02 with flanged and thermal butt fusion joints complete in place.

1.2 REFERENCES

A. To the extent referenced in this specification section, the standards and documents listed below are included, and made a part of this specification.
B. In the event of a conflict, the requirements of this specification section prevail.
C. Unless otherwise specified, references to documents shall mean the latest published edition of the referenced document in effect at the bid date of the project.
D. ANSI/AWWA (www.awwa.org)
1. ANSI/AWWA C901-08 Polyethylene (PE) Pressure Pipe and Tubing, ½ In. (13 mm) Through 3 In. (76 mm) for Water Service
2. ANSI/AWWA C906-07 Polyethylene (PE) Pressure Pipe and Fittings, 4 In. (100 mm) Through 63 In. (1,600 mm), for Water Distribution and Transmission
3. AWWA M55 Manual of Water Supply Practices, PE Pipe–Design and Installation
E. Plastics Pipe Institute, PPI (www.plasticpipe.org)
1. PPI Handbook of Polyethylene Pipe – 2009 (2ndEdition)
2. PPI TR-33 Generic Butt Fusion Joining Procedure for Polyethylene Gas Pipe
3. PPI TR-34 Disinfection of Newly Constructed Polyethylene Water Mains
4. PPI TR-41 Generic Saddle Fusion Joining Procedure for Polyethylene Gas Piping
5. PPI TN-42 Recommended Minimum Training Guidelines for PE Pipe Butt Fusion Joining Operators for Municipal and Industrial Projects (2009)
F. ASTM (www.astm.org)
1. ASTM F 714 Standard Specification for Polyethylene (PE) Plastic Pipe (SDR-PR) Based on Outside Diameter
2. ASTM F905 Standard Practice for Qualification of Polyethylene Saddle-Fused Joints
3. ASTM F 1055 Standard Specification for Electrofusion Type Polyethylene Fittings for Outside Diameter Controlled Polyethylene Pipe and Tubing
4. ASTM F 1290 Standard Practice for Electrofusion Joining Polyolefin Pipe and Fittings
5. ASTM F 1412 Standard Specification for Polyolefin Pipe and Fittings for Corrosive Waste Drainage Systems
6. ASTM F1417 Standard Test Method for Installation Acceptance of Plastic Gravity Sewer Lines Using Low-Pressure Air4 December 2009
7. ASTM F 2164 Standard Practice for Field Leak Testing of Polyethylene (PE) Pressure Piping Systems Using Hydrostatic Pressure
8. ASTM F2206 Standard Specification for Fabricated Fittings of Butt-Fused Polyethylene (PE) Plastic Pipe, Fittings, Sheet Stock, Plate Stock, or Block Stock
9. ASTM D 2239 Standard Specification for Polyethylene (PE) Plastic Pipe (SIDR-PR) Based on Controlled Inside Diameter
10. ASTM D 2321 Standard Practice for Underground Installation of Thermoplastic Pipe for Sewers and Other Gravity-Flow Applications
11. ASTM F 2620 Standard Practice for Heat Fusion Joining of Polyethylene Pipe and Fittings
12. ASTM D 2683 Standard Specification for Socket-Type Polyethylene Fittings forOutside Diameter-Controlled Polyethylene Pipe and Tubing
13. ASTM D 2737 Standard Specification for Polyethylene (PE) Plastic Tubing
14. ASTM D 2774 Standard Practice for Underground Installation of Thermoplastic Pressure Piping
15. ASTM D 3261 Standard Specification for Butt Heat Fusion Polyethylene (PE) Plastic Fittings for Polyethylene (PE) Plastic Pipe and Tubing
16. ASTM D 3350-08 Standard Specification for Polyethylene Plastics Pipe and Fittings Materials

1.3 SYSTEM DESIGN PARAMETERS

A. The polyethylene system working pressure rating accommodates the normal operating pressure and the repetitive surges. The pressure rating applies at 80oF or less. Piping installed under this project may experience operating temperatures up to 95oF. Associated pressure rating at this elevated temperature shall not be less than 80% of the pressure rating at 90oF.

B. Per AWWA 901 and C906, the repetitive surge pressure allowance is one half the pressure class of the pipe, and the occasional surge over pressure allowance is equal to the pressure class of the pipe. Allowable Total Pressure during Recurring Surge conditions equals 1.5 times the pipe's pressure class. Allowable Total Pressure during Occasional Surge conditions equals 2.0 times the pipe's pressure class.

Table 1 gives the Pressure Class per AWWA C906, Pressure Rating and Allowable Total Pressure during Recurring and Occasional Surge for PE4710 pipe at 80˚F or less.

1.4 SUBMITTALS

A. Quality Assurance / Control Submittals
1. Affirmation that product shipped meets or exceeds the standards set forth in this specification. This shall be in the form of a written document from the manufacturer attesting to the manufacturing process meeting the standards.
2. Manufacturers recommended fusion procedures for the products.

1.5 DELIVERY – STORAGE – HANDLING

A. Handle the pipe in accordance with the PPI Handbook of Polyethylene Pipe (2nd Edition), Chapter 2 using approved strapping and equipment rated for the loads encountered. Do not use chains, wire rope, forklifts or other methods or equipment that may gouge or damage the pipe or endanger persons or property. Field storage is to be in compliance with AWWA Manual of Practice M55 Chapter 7. B. If any gouges, scratches, or other damage to the pipe results in loss of 10% of the pipe wall thickness, cut out that section or do not use.

PART 2 – PRODUCTS FOR 4 INCH THROUGH 54 INCH PIPE PER AWWA C906

2.1 PIPE

A. Polyethylene pipe shall be made from HDPE material having a material designation code of PE4710. The material shall meet the requirements of ASTM D 3350. The pipe segments shall be joined using flanges or the thermal butt fusion method.
B. The pipe and fittings shall meet the requirements of AWWA C906.
C. Approved manufacturers are: One of the following, or approved equal:
1. Performance Pipe
2. Flying W
3. J.M. Eagle
4. Pipeline Plastics
5. WL Plastics

2.2 FITTINGS

A. Butt Fusion Fittings - Fittings shall be made of HDPE material with a minimum material designation code of PE4710 and with a minimum Cell Classification as noted in 2.01A. Butt Fusion Fittings shall meet the requirements of ASTM D3261. Molded and fabricated fittings shall have a pressure rating equal to the pipe unless otherwise specified on the plans. All fittings shall meet the requirements of AWWA C906. Markings for molded fittings shall comply with the requirements of ASTM D 3261. Fabricated fittings shall be marked in accordance with ASTM F 2206. Socket fittings shall meet ASTM D 2683.
B. Electrofusion Fittings - Fittings shall be made of HDPE material with a minimum material designation code of PE4710 and with a minimum Cell Classification as noted in 2.01A. Electrofusion Fittings shall have a manufacturing standard of ASTM F1055. Fittings shall have a pressure rating equal to the pipe unless otherwise specified on the plans. All electrofusion fittings shall be suitable for use as pressure conduits, and have nominal burst values of four times the Working Pressure Rating (WPR) of the fitting. Markings shall be according to ASTM F 1055.
C. Flanges and Mechanical Joint Adapters (MJ Adapters) – Flanges and Mechanical Joint Adapters shall have a material designation code of PE4710 and a minimum Cell Classification as noted in 2.01A. Flanged and Mechanical Joint Adapters can be made to ASTM D 3261 or if machined, must meet the requirements of ASTM F 2206. Flanges and MJ Adapters shall have a pressure rating equal to the pipe unless otherwise specified on the plans. Markings for molded or machined flange adapters or MJ Adapters shall be per ASTM D 3261. Fabricated (including machined) flange adapters shall be per ASTM F 2206.

Van-Stone style, metallic (including stainless steel), convoluted or flat-plate, back-up rings and bolt materials shall follow the guidelines of Plastic Pipe Institute Technical Note # 38, and shall have the bolt-holes and bolt-circles conforming to one of these standards: ASME B-16.5 Class 150, ASME B-16.47 Series A Class 150, ASME B-16.1 Class 125, or AWWA C207 Class 150 Series B, D, or E. The back-up ring shall provide a long-term pressure rating equal to or greater than the pressure-class of the pipe with which the flange adapter assembly will be used, and such pressure rating shall be marked on the back-up ring. Flange assemblies shall be assembled and torqued according to PPI TN-38 "Bolt Torque for Polyethylene Flanged Joints.".

2.3 PIPE AND FITTING IDENTIFICATION

A. The pipe shall be marked in accordance with the standards to which it is manufactured.
B. Color identification by the use of stripes on pipe to identify pipe service shall be required. If used, stripes or colored exterior pipe product shall be blue for potable water, or green for wastewater/sewage, or purple (lavender) for reclaimed water.

PART 3 – EXECUTION

3.1 JOINING METHODS

A. Butt Fusion: The pipe shall be joined by the butt fusion procedure outlined in ASTM F 2620 or PPI TR-33. All fusion joints shall be made in compliance with the pipe or fitting manufacturer's recommendations. Fusion joints shall be made by qualified fusion technicians per PPI TN-42.
B. Saddle Fusion: Saddle fusion could be used to fuse branch saddles, tapping tees, and other HDPE constructs onto the wall of the main pipe. Saddle fusion shall be done in accordance with ASTM F 2620 or TR-41 or the fitting manufacturer's recommendations and PPI TR-
41. Saddle fusion joints shall be made by qualified fusion technicians. Qualification of the fusion technician shall be demonstrated by evidence of fusion training within the past year on the equipment to be utilized on this project (ASTM F905).
C. Socket Fusion: Socket fusion is not allowed on this project.
D. Electrofusion: Electrofusion joining shall be done in accordance with the manufacturers recommended procedure. Other sources of electrofusion joining information are ASTM F 1290 and PPI TN 34. The process of electrofusion requires an electric source , a transformer, commonly called an electrofusion box that has wire leads, a method to read electronically (by laser)or otherwise input the barcode of the fitting, and a fitting that is compatible with the type of electrofusion box used. The electrofusion box must be capable of reading and storing the input parameters and the fusion results for later download to a record file. Qualification of the fusion technician shall be demonstrated by evidence of electrofusion training within the past year on the equipment to be utilized for this project.
E. Mechanical:
1. Mechanical connection of HDPE to auxiliary equipment such as valves, pumps, and fittings shall use mechanical joint adapters and other devices in conformance with the PPI Handbook of Polyethylene Pipe, Chapter 9 and AWWA Manual of Practice M55, Chapter 6.
2. Mechanical connections on small pipe under 3" are available to connect HDPE pipe to other HDPE pipe, or a fittings, or to a transition to another material. The use of stab-fit style couplings is allowed, along with the use of metallic couplings of brass and other materials. When a compression type or mechanical type of coupling is used, the use of a rigid tubular insert stiffener inside the end of the pipe is recommended.
3. Mechanical couplings that wrap around the pipe and act as saddles are made by several manufacturers specifically for HDPE pipe. All such saddles, tapping saddles, couplings, clamps etc. shall be recommended by the manufacturer as being designed for use with HDPE pipe at the pressure class listed in this section.
4. Unless specified by the fitting manufacturer, a restraint harness or concrete anchor is recommended with mechanical couplings to prevent pullout.
5. Mechanical coupling shall be made by qualified technicians. Qualification of the field technician shall be demonstrated by evidence of mechanical coupling training within the past year. This training shall be on the equipment and pipe components to be utilized for this project.
F. Flanged: Flanged connections shall consist of the following:
1. A polyethylene flange shall be thermally butt-fused to the stub end of the pipe.
2. A back-up ring shall mate with another back-up ring or flange, as required.
3. Connections shall be made with bolts and nuts.
4. Flanged connections shall be provided with a full-face neoprene gasket.
5. All materials shall be compatible to the application.
G. Joint Recording - The critical parameters of each fusion joint, as required by the manufacturer and these specifications, shall be recorded either manually or by an electronic data logging device. All fusion joint data shall be included in the Fusion Technician's joint report.

3.2 INSTALLATION

A. Buried HDPE pipe and fittings shall be installed in accordance with ASTM D2321 or ASTM D2774 for pressure systems and AWWA Manual of Practice M55 Chapter 7.
B. For pipe buried in normal (dry) soils:
a. Pipe embedment - Embedment material should be Class I, Class II, or Class III, materials as defined by ASTM D-2321 Section 6. The use of Class IV and Class V materials is not recommended, however it may be used only with the approval of the engineer and appropriate compaction.
b. Bedding: Pipe bedding shall be in conformance with ASTM D2321 Section 8. Compaction rates should be as specified in ASTM D2321. Deviations shall be approved by the engineer.
c. Haunching and backfill shall be as specified in ASTM D 2321 Section 9 with Class I, II, or III materials. Compaction shall be in excess of 95% Proctor.
C. For pipe buried in saturated (wet) soils:
a. Pipe embedment - Embedment material shall be #57 stone compacted in excess of 95% Proctor.
b. Bedding: Bedding material shall be #57 stone compacted in excess of 95% Proctor.
c. Haunching and backfill shall be rip-rap or shot-rock from blasting activities compacted in excess of 95% Proctor.

3.3 INSPECTION

A. Inspect the pipe for defects before installation and fusion. Defective, damaged or unsound pipe will be rejected.

3.4 TESTING

A. Pressure testing shall be conducted in accordance with ASTM F2164, Field Leak Testing of Polyethylene Pressure Piping Systems Using Hydrostatic Pressure. The HDPE pipe shall be filled with water, raised to test pressure and allowed to stabilize. The test pressure shall be 1.5 times the operating pressure at the lowest point in the system. In accordance with section 9.8, the pipe shall pass if the final pressure is within 5% of the test pressure for 1 hour. For safety reasons, hydrostatic testing only will be used.

B. Quality Control Testing (On Site Bend Back Test)

Prior to HDPE pipe being installed in the trench, at the beginning of the job, the contractor shall cut out the first butt fusion of each pipe size. The contractor shall prepare the sample for the test in accordance with the "Job Aid/ Bend Back Testing" procedure document prepared by ISCO Industries, LLC dated Oct. 26, 06 or as revised, and in accordance with ASTM D 2657. The samples shall be tested in the presence of the owner's representative and / or the irrigation consultant, all in accordance with testing procedures outlined in the ISCO document. All samples shall be labeled and saved. Testing must be done at 73 degrees F plus or minus 5 degrees. The test temperature and sample size are critical to testing. The purpose of the test is to determine if a good weld was made. A pass means no failures during the bend back test. This means a good weld. A break means a bad weld. Any failure shall require additional testing.

C. Contractor Qualifications

The contractor shall have successfully installed high density polyethylene pipe in golf/turf irrigation projects. References will be required. These reference(s) must provide a satisfactory response or the experience will not be accepted.

If a contractor has not previously successfully installed HDPE pipe for golf/turf irrigation projects, he will be required to have a qualified fusion technician from the pipe supplier for a period of three to five day (at the expense of the contractor). The length of time required for HDPE pipe (fusion and mechanical) training shall be determined by the owner or his representative. The technician must have been trained and have fusion certification. The training must have been completed within the past twelve months. A designated person or persons will be trained by the technician. The training will include the following:
1. butt fusion
2. socket fusion
3. electrofusion
4. attachment of mechanical saddles.
5. If electrofused or side wall fusion is required, this training must also be complete while the technician is on site.

D. Contractor Equipment Qualifications

If the contractor owns butt fusion equipment, the equipment must be serviced prior to use for this project. The machine must be environmental friendly and satisfactory working order. The hydraulic system must be leak free. The pressure gage must be checked for accuracy and the thermometer checked.

If a butt fusion machine is rented, it must be rented from company that has a fusion machine service center or centers certified by the butt fusion machine manufacturer. The machine must arrive with certification that the pressure gage and heater thermometer were accurate when shipped.

3.5 CONTRACTOR WARRANTY

LIMITED WARRANTY: Contractor warrants that, for a period of five years from the date of installation, it will re–fuse or repair a fusion connection that is defective in workmanship, provided that Buyer, upon discovery of a defect, promptly notifies Contractor of the defect and, allows the Contractor to inspect at the place of installation. If it is determined the fused connection to be defective, Contractor will re–fuse or repair the connection at the jobsite. Contractor does not warrant the product itself, only the fused connection. This warranty does not cover labor or other costs, only the fused connection. Buyer's sole remedy for defective connection shall be to receive replacement fusion of the pipe or fitting as provided in this Limited Warranty.
Other than the above limited warranty, Contractor makes no warranty and expressly disclaims all other warranties, express or implied, including, but not limited to, the warranties of merchantability and fitness for a particular purpose.
Contractor's liability arising out of or related to this contract or any product or service supplied by contractor (whether such liability is alleged as a breach of contract, breach of liability or otherwise) shall in no even exceed the original purchase price of the defective connection plus applicable freight costs actually paid by buyer. Contractor will not be liable for any consequential, incidental, special, indirect or punitive damages, loss of profits, loss of business opportunity or other loss even if contractor knew or should have known of the possibility of such damages or losses.

PSLUSD Project No: 5360

City of Port St. Lucie Project No: P20-171

Landscape Design Associates
25110 NW 182nd Ave
High Springs, FL 32643
352-210-5785 ph, www.landscapeda.com

Revisions	
Date	Comments

Scale: NTS
Drawn by: SM
Checked by: SM
CADD No.: 20-124 ir roadway01
Date: 10/12/2021

Legacy Park E-W Road

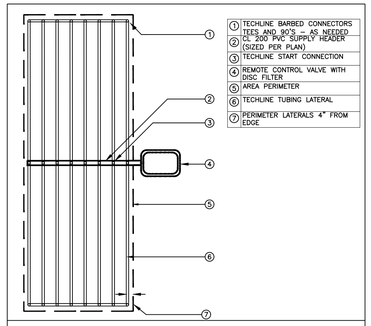
City of Port St. Lucie

Irrigation Details

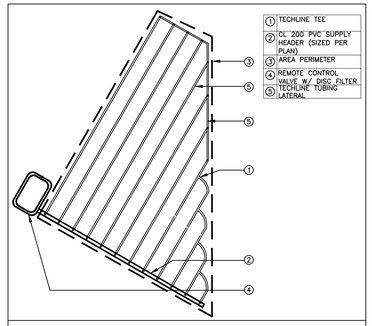
REGISTERED LANDSCAPE ARCHITECT
LA0001733
STATE OF FLORIDA

12.6.21

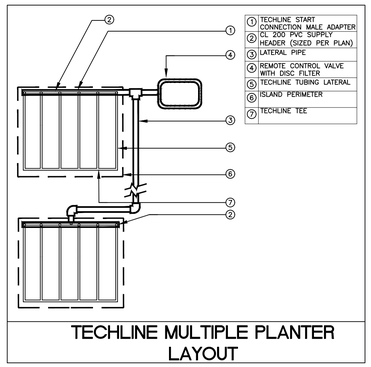
IR-08



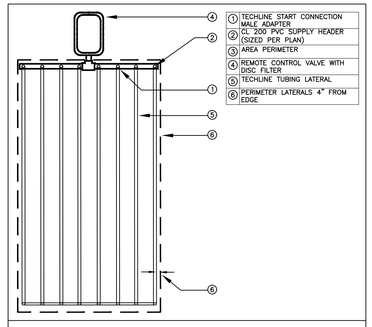
TECHLINE DUAL FEED LAYOUT



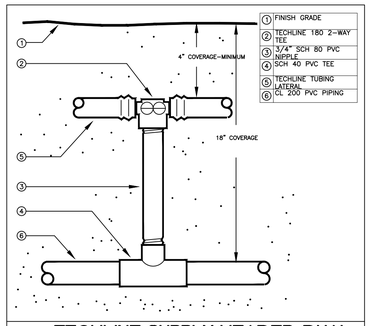
TECHLINE ODD AREA LAYOUT



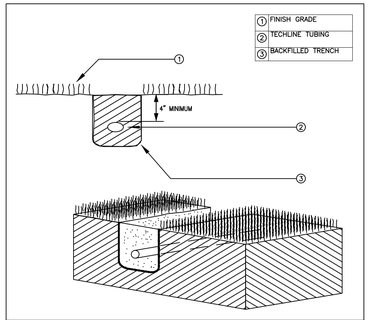
TECHLINE MULTIPLE PLANTER LAYOUT



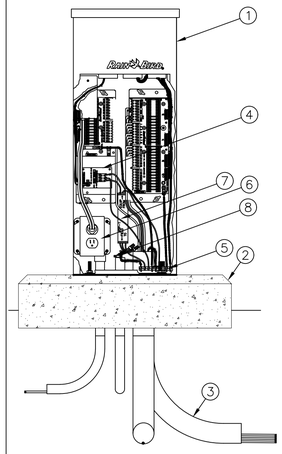
TECHLINE SINGLE FEED LAYOUT



TECHLINE SUPPLY HEADER-DUAL FEED



TECHLINE TRENCHING DETAIL



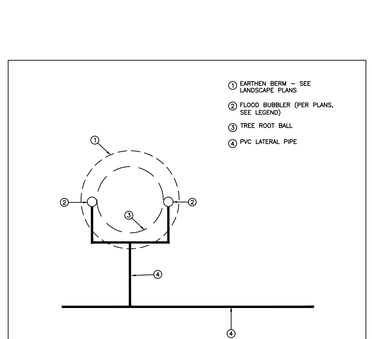
1. RAIN BIRD STAINLESS STEEL PEDESTAL WITH RAIN BIRD ESP-SITE-2S CCU-CONTROLLER (UL LISTED-OUTDOOR LAWN SPRINKLER CONTROL.)
2. MINIMUM 3,000 PSI CONCRETE BASE WITH VARIOUS CONDUIT PENETRATIONS AND SWEEP ELLS AS SHOWN. (2' X 2' X 6" SIZE)
3. SCHEDULE 40 PVC "GRAY" CONDUIT WITH SWEEP EL SIZED IN ACCORDANCE WITH NEC FOR VARIOUS WIRE SIZE AND COUNTS. (MIN. 600-VOLT INSULATION REQUIRED.)
4. ESP-SITE-TW CONNECTION BOARD – M81200.
5. GROUND BONDING LUG PROPERLY ATTACHED TO ELECTRICAL ENCLOSURE AND SIZED TO ACCOMMODATE ALL GROUND WIRING WITH A SINGLE CONDUCTOR INSTALLED IN EACH SCREW TERMINAL.
6. SURGE SUPPRESSION RECEPTACLE. INSTALL IN A PROPERLY SIZED ENCLOSURE WITH COVER. ALL CONNECTED EQUIPMENT SHALL UTILIZE A PROPERLY SIZED "3 PRONG" POWER CORD WITH MINIMUM 600-VOLT INSULATION.
7. MSP-1 SURGE PIPE KIT-M81300 (USE SINGLE HOLE 3/4" PIPE STRAP ON WALL MOUNT APPLICATIONS.)
8. REA # PE 39 DIRECT BURIAL (#19-3) PHONE EXCHANGE CABLE (3 PAIR MINIMUM). CONNECT GROUND BONDING CLAMP FROM COMMUNICATION WIRE SHIELD TO MULTI-LUG TERMINAL.

NOTES:
ALL DETAILS PROVIDED ARE DIAGRAMMATIC AND MUST BE UTILIZED FOR INSTALLATION ONLY BY A LOCALLY LICENSED ELECTRICAL INSTALLER IN ACCORDANCE WITH BOTH NATIONAL AND LOCAL ELECTRICAL CODE REQUIREMENTS.

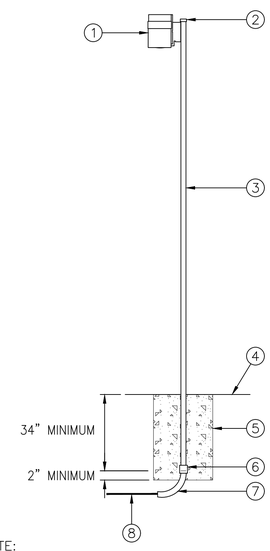
NO CHANGES, MODIFICATIONS, ADDITIONS OR DELETIONS SHALL BE MADE TO ANY UL LISTED EQUIPMENT AND INSTALLATION SHALL CONFORM TO THE ORIGINAL EQUIPMENT MANUFACTURER'S RECOMMENDATIONS OR NEC, WHICHEVER IS THE MOST CONSERVATIVE METHOD.

ALL WIRE, CONDUIT AND ENCLOSURES SHOWN IN THE ASSOCIATED DETAIL ARE DIAGRAMMATIC. PROPER SIZING SHALL BE THE RESPONSIBILITY OF THE LOCALLY LICENSED ELECTRICAL INSTALLER.

ESP-SITE-2S CONTROLLER



BUBBLER PLACEMENT



1. TIPPING BUCKET RAIN GAUGE
2. 2" GALVANIZED STEEL CAP
3. 2"X14' GALVANIZED STEEL PIPE
4. FINISH GRADE
5. CONCRETE FOOTING – MINIMUM OF 3' DEEP BY 12" DIAMETER
6. 2" PVC SCH 80 FEMALE ADAPTER
7. 2" GRAY PVC ELECTRICAL SWEEP
8. WIRE FROM RAIN CAN TO CCU/SITE SAT

NOTE:

1. CONTRACTOR TO RUN WIRE FROM RAIN CAN TO CCU/SITE SAT IN 1" PVC ELECTRICAL CONDUIT BY BUSHING DOWN FROM 2" TO 1" AT SWEEP.

RAIN CAN

PSLUSD Project No: 5360

City of Port St. Lucie Project No: P20-171

Landscape Design Associates
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Scale: NTS
Drawn by: SM
Checked by: SM
CADD No.: 20-124 ir roadway01
Date: 10/12/2021

Revisions
Date | Comments

Legacy Park E-W Road
City of Port St. Lucie
Irrigation Details

REGISTERED LANDSCAPE ARCHITECT LA0001733 STATE OF FLORIDA

12.6.21
IR-09