LOXAHATCHEE RIVER DISTRICT
2500 JUPITER PARK DRIVE, JUPITER, FLORIDA 33458 TEL: (561) 747-5700 FAX: (561) 747-9929

D. Albrey Arrington, Ph.D. EXECUTIVE DIRECTOR loxahatcheeriver.org

AGENDA
REGULAR MEETING #13-2022
SEPTEMBER 15, 2022 – 7:00 PM AT DISTRICT OFFICES

ALSO, THE MEETING WILL BE AVAILABLE TO THE PUBLIC ONLINE AT:
LOXAHATCHEERIVER.ORG/PUBLICMEETING

1. Call to Order & Pledge of Allegiance
2. Administrative Matters
   A. Roll Call
   B. Previous Meeting Minutes Page 5
   C. Additions and Deletions to the Agenda
3. Comments from the Public
4. Status Updates
   A. Loxahatchee River Watershed Page 10
   B. Loxahatchee River District Dashboard Page 11
5. Consent Agenda (see next page) Page 12
6. Regular Agenda
   A. Consent Agenda Items Pulled for Discussion
   B. FY2023 Budget Page 173
   C. Chapter 31-5 Rulemaking Proceeding Page 201
7. Reports (see next page) Pulled for Discussion
8. Future Business Page 272
9. Board Comments
10. Adjournment

"…if a person decides to appeal any decision made by the Board, with respect to any matter considered at such meeting or hearing, he/she will need a record of the proceedings, and that, for such purpose, he/she may need to ensure that a verbatim record of the proceedings is made, which record includes the testimony and evidence upon which the appeal is to be based."

Submitted by:
Date: September 6, 2022

5. CONSENT AGENDA

All items listed in this portion of the agenda are considered routine and will be enacted by one motion. There will be no separate discussion of these items unless requested by a Board member or citizen; in which event, the item will be removed and considered under the regular agenda.

A. Manual of Minimum Construction Standards and Technical Specifications – to ratify revisions Page 14
B. Money Purchase Plan and Trust (Retirement Plan) – to approve minor revision Page 138
C. Personnel Policies & Procedures Section 5.1 Retirement Plan – to approve revision Page 139
D. Annual Lawn/Landscape Maintenance Services (Terracon Services, Inc.) – to approve annual purchase order Page ~~143~~ 142
E. Bill Printing and Postage (Arista) – to approve annual purchase order Page 144
F. Biosolids Hauling (Synagro) – to approve annual purchase order Page 145
G. Biosolids Processing (Solid Waste Authority) – to approve annual purchase order Page 149
H. Bulk Fuel Procurement – to authorize annual bulk fuel purchase Page 152
I. Chlorine (Allied Universal) Supply – to award contract Page 153
J. First Billing Merchant Service – to approve purchase order Page 154
K. Hauling of Liquid Domestic Wastewater Sludge and Collection System Debris – to approve annual contract extension Page 157
L. Home Depot Open Purchase Order – to approve annual purchase order Page 163
M. Low Pressure Sewer System General Construction Services – to approve annual contract extension Page 164
N. Purchase of Odor and Corrosion Control Chemicals and Services (Evoqua) – to approve annual purchase order Page 167
O. Solids Dewatering Polymer (SNF Polydyne) Purchase – to approve annual purchase order Page 169
P. Fixed Asset Disposal – to approve disposal Page 170
Q. Change Orders to Current Contracts – to approve modifications Page 171

7. REPORTS

A. Neighborhood Sewering Page 213
B. Legal Counsel's Report Page 215
C. Engineer's Report Page 219
D. Busch Wildlife Sanctuary Page 228
E. Director's Report Page 229

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D. Albrey Arrington, Ph.D. EXECUTIVE DIRECTOR loxahatcheeriver.org

AGENDA
PUBLIC HEARING #04-2022
SEPTEMBER 15, 2022 - 6:55 P.M. AT DISTRICT OFFICES
ALL MEETINGS ARE OPEN TO THE PUBLIC

1. Call to Order and Pledge of Allegiance
2. Roll Call
3. To receive public comments pertaining to the revision of LRD Rule Chapter 31-5, Rule Making Proceeding
4. Comments from the Board
5. Adjournment

".... if a person decides to appeal any decision made by the Board, with respect to any matter considered at such meeting or hearing, he/she will need a record of the proceedings, and that, for such purpose, he/she may need to ensure that a verbatim record of the proceedings is made, which record includes the testimony and evidence upon which the appeal is to be based."

Submitted by:
Date: September 6, 2022

LOXAHATCHEE RIVER DISTRICT
2500 JUPITER PARK DRIVE, JUPITER, FLORIDA 33458 TEL: (561) 747-5700 FAX: (561) 747-9929

D. Albrey Arrington, Ph.D. EXECUTIVE DIRECTOR loxahatcheeriver.org

AGENDA
PUBLIC HEARING #05-2022
SEPTEMBER 15, 2022 - 6:56 P.M. AT DISTRICT OFFICES
ALL MEETINGS ARE OPEN TO THE PUBLIC

1. Call to Order and Pledge of Allegiance
2. Roll Call
3. To receive public comments pertaining to the Final Budget for the 2023 Fiscal Year
4. Comments from the Board
5. Adjournment

".... if a person decides to appeal any decision made by the Board, with respect to any matter considered at such meeting or hearing, he/she will need a record of the proceedings, and that, for such purpose, he/she may need to ensure that a verbatim record of the proceedings is made, which record includes the testimony and evidence upon which the appeal is to be based."

Submitted by:
Date: September 6, 2022

LOXAHATCHEE RIVER DISTRICT
2500 JUPITER PARK DRIVE, JUPITER, FLORIDA 33458 TEL: (561) 747-5700 FAX: (561) 747-9929
D. Albrey Arrington, Ph.D. EXECUTIVE DIRECTOR loxahatcheeriver.org

MEMORANDUM

TO: Governing Board

FROM: Recording Secretary

DATE: September 9, 2022

RE: Approval of Meeting Minutes

Attached herewith are the minutes of the Regular Meeting of August 18, 2022. As such, the following motion is presented for your consideration:

"THAT THE GOVERNING BOARD approve the minutes of the August 18, 2022 Regular Meeting as submitted."

Ref: #10-2022

LOXAHATCHEE RIVER ENVIRONMENTAL CONTROL DISTRICT
REGULAR MEETING - MINUTES
AUGUST 18, 2022

1. CALL TO ORDER

Chairman Snyder called the Regular Meeting of August 18, 2022 to order at 7:00 PM and explained the various methods of attending the meeting (in person, electronically or telephonically).

2. ADMINISTRATIVE MATTERS

A. ROLL CALL

The following Board Members were in attendance:

Mr. Rockoff
Mr. Snyder
Dr. Rostock
Mr. Boggie

Staff Members in attendance were Mr. Dean , Mr. Howard, and Ms. Fraraccio, Mr. Pugsley.

Consultants in attendance were Mr. Curtis Shenkman and Mr. Hunter Shenkman from Shenkman Law, P.A.

Board Member candidates Mr. Clinton Yerkes was in attendance and Mr. Kevin Baker attended the meeting electronically.

B. PREVIOUS MEETING MINUTES

"THAT THE GOVERNING BOARD approve the minutes of the July 21, 2022 Regular Meeting as submitted."

MOTION: Made by Mr. Rockoff, Seconded by Dr. Rostock,
Passed Unanimously.

C. ADDITIONS & DELETIONS TO THE AGENDA

Delete item 6C.

3. COMMENTS FROM THE PUBLIC

Email was received from Mr. Kevin L. Baker, 8578 155th PL N, asking about landscape irrigation at the River Center. Mr. Dean read the comment aloud.

4. STATUS UPDATES

A. LOXAHATCHEE WATERSHED STATUS

Mr. Howard presented an update on water surveillance for SARS-CoV-2/Covid -19.

B. LOXAHATCHEE RIVER DISTRICT DASHBOARD

Mr. Dean reviewed the District Dashboard.

5. CONSENT AGENDA

MOTION: Made by Mr. Boggie, Seconded by Mr. Rockoff,
Passed unanimously.

"THAT THE GOVERNING BOARD approve the Consent Agenda of August 18, 2022 as presented."

The following motions were approved as a result of the Board's adoption of the Consent Agenda:

A. Island Way Property Notice of Intent to Assess (Res. 2022-06)

"THAT THE GOVERNING BOARD approve Resolution 2022-06 the NOTICE OF INTENT to Assess, the Pending Lien Notice, and the Exhibits for the 28-40-42-000-000-00040-1 Assessment Area."

B. Policy to Reconcile Underbilling and Overbilling – to approve policy

"THAT THE DISTRICT GOVERNING BOARD approves the attached Policy To Reconcile Undercharges and Overcharges with an effective date of August 18, 2022."

C. Administrative Credits – to approve credits

"THAT THE DISTRICT GOVERNING BOARD approves Administrative Credits for Account 1349700 in the amount of $24,118.91 and Account 1389300 in the amount of $19,182.53."

D. Audit Services Contract – to approve renewal

"THAT THE GOVERNING BOARD authorize the Executive Director and Chairman to execute the Nowlen, Holt & Miner, P.A. Engagement Letter dated August 5, 2022 for the provision of Audit Services for the fiscal year 2022."

E. Fixed Asset Disposal – to approve disposal

No assets for disposal were presented.

F. Change Orders to Current Contracts – to approve modifications

No change orders were presented.

6. REGULAR AGENDA

A. CONSENT AGENDA ITEMS PULLED FOR DISCUSSION

B. Draft FY2023 Budget
Mr. Dean reviewed the draft budget figures.

D. Rule Chapter 31-5
Mr. Dean reviewed proposed revisions to LRD Rule Chapter 31-5 Rulemaking Proceeding and informed the Board that this draft rule revision will be brought to the Board for approval at their regular meeting in September.

7. REPORTS

The following reports stood as written.

A. NEIGHBORHOOD SEWERING

B. LEGAL COUNSEL'S REPORT

C. ENGINEER'S REPORTS

D. BUSCH WILDLIFE SANCTUARY

E. DIRECTOR'S REPORT

8. FUTURE BUSINESS

Mr. Dean reviewed Future Business.

9. COMMENTS FROM THE BOARD

Mr. Boggie discussed the Town of Jupiter's workshop meeting discussing the renewal agreement for NANO Concentrate. He expressed his desire to respond directly to the Jupiter Town Council.

10. ADJOURNMENT

MOTION: Made by Mr. Rockoff, Seconded by Mr. Boggie,
Passed Unanimously.

"That the Regular Meeting of August 18, 2022 adjourns at 7:50 PM."

_____ _____

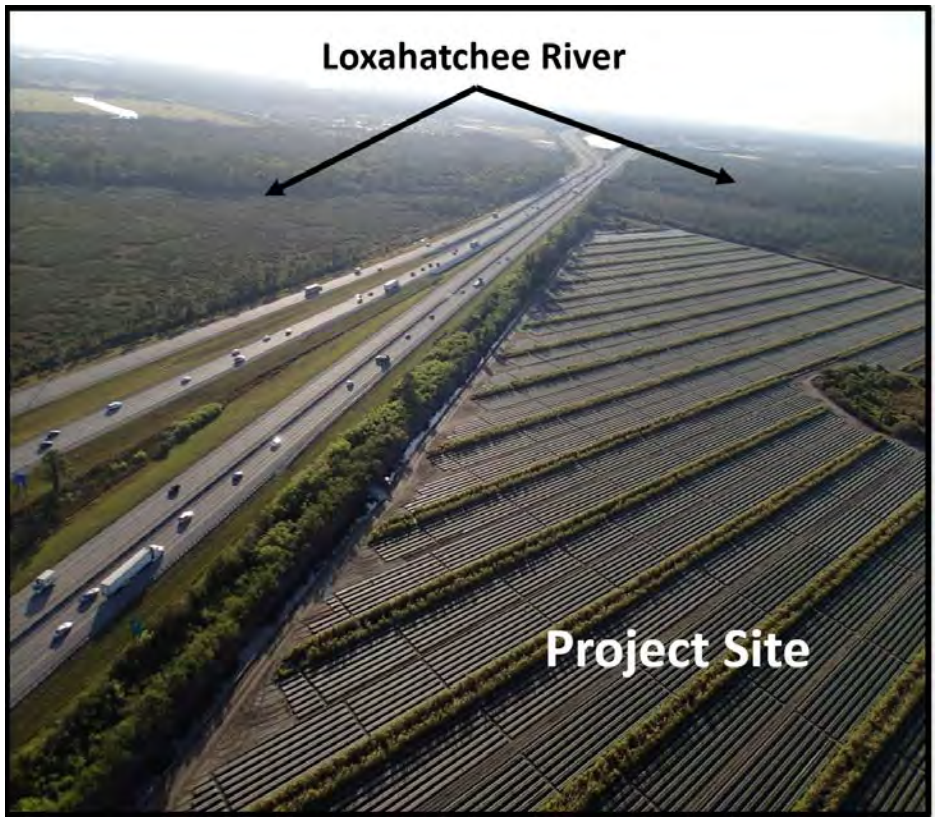
BOARD CHAIRMAN BOARD SECRETARY

_____

RECORDING SECRETARY

Loxahatchee River Watershed Status
SFWMD Cypress Creek Wetland Restoration Project

The South Florida Water Management District (SFWMD) is constructing a wetland restoration project in Cypress Creek basin, a tributary into the Northwest Fork of the Loxahatchee River. In 2003, the SFWMD and Martin County acquired over 650 acres of land in this area under their land acquisition program for restoration. A key element of this acquisition was a 317-acre working pepper and tomato farm. Now that the lease agreement for the farm has expired, the SFWMD has begun a comprehensive restoration project of the site. At our meeting we present some of the details on this exciting project.



LOXAHATCHEE RIVER DISTRICT'S EXECUTIVE DASHBOARD

		Stewardship	Pre-Treatment	Collection & Transmission		Wastewater Treatment			Reclaimed Water	EHS	General Business					River Health		
		# People educated at RC	Grease Interceptor Inspections	Customer Service	Unauthorized Discharge of Sewage	Mean Daily Incoming Flow	Permit exceedance	NANO Blend to Reuse (@ 511)	Delivery of Reclaimed Water	Employee Safety	Cash Available	Revenue (excluding assessment & capital contrib.)	Operating Expenses	Capital Projects		Minimum Flow Compliance	Salinity @ NB seagrass beds	River Water Quality
Units		% of Target	% requiring pump out	# blockages with damage in home	Gallons; # impacting surface waters	million gallons/day	# occurrences	Max Specific Conductance (umhos/cm)	# days demand not met	# of OSHA recordable injuries	$	% of Budget	% of Budget	% within budget	average # days ahead (behind) schedule	# Days MFL Violation	‰	Fecal Coliform Bacteria (cfu/100ml)
Green Level		≥ 90%	≤ 15	Zero	<704; 0	< 7.7	Zero	<1542	<2	Zero	≥ $9,894,657	≥ 95%	≥ 85% but ≤ 105%	≥80%	≥ (30)	0	min ≥ 20 ‰	≤ 1 site > 200
Yellow		< 90%	≤ 25	1	≤1,500; 0	< 8.8	1	≤1875	≥ 2	-	< $9,894,657	≥ 90%	≥ 80%	≥60%	< (30)	1	min ≥ 10 ‰	≤ 3 sites >200
Red		<75%	> 25	≥ 2	>1,500; ≥1	≥ 8.8	≥ 2	>1875	≥ 9	≥ 1	< $5,557,057	< 90%	< 80% or > 105%	< 60%	< (60)	≥ 2	min < 10 ‰	≥ 4 sites > 200
2019 Baseline		100%	9	1	8,022	6.8	0	1,229	1	0.3	$ 35,137,006	100%	89%	95%		2	22.9	1
2020 Baseline		34%	8	0	3,292	7.2	0	1,183	1	0.3	$ 35,350,661	100%	90%	91%	-15	7	14.6	2
2021 Baseline		113%	16	0.3	1,130	7.1	0	1,294	2	0.2	$ 40,651,532	97%	89%	79%	-34	0	24.3	3
2021	Aug	160%	14	1	2,060; 0	6.9	0	1,243	0	0	$ 42,047,326	95%	89%	76%	(42)	0	16.9	5
	Sept	192%	11	0	357; 0	6.8	0	1,300	1	0	$ 40,450,479	95%	86%	76%	(61)	0	17.2	6
	Oct	77%	18	0	1,050; 1	7.0	0	1,221	0	0	$ 40,516,049	94%	100%	79%	(55)	0	19.3	6
	Nov	75%	12	0	565; 0	7.4	0	1,164	0	1	$ 42,924,083	97%	91%	81%	(49)	0	9.9	3
	Dec	67%	12	0	1,500; 0	7.3	0	1,021	0	0	$ 42,827,478	106%	98%	78%	(55)	0	18.6	0
2022	Jan	65%	16	0	25; 0	7.3	0	1,154	0	0	$ 42,677,604	103%	95%	77%	(42)	0	27.9	4
	Feb	79%	8	0	225; 0	7.3	0	1,383	0	0	$ 44,675,863	101%	94%	80%	(54)	0	30.2	3
	Mar	91%	12	0	241; 0	7.2	0	1,384	0	0	$ 44,151,634	100%	93%	80%	(59)	0	24.0	2
	Apr	104%	22	1	217; 0	7.1	0	1,296	0	0	$ 44,230,248	103%	93%	83%	(62)	0	29.3	4
	May	55%	13	0	13; 0	6.5	0	1,312	1	0	$ 46,067,857	102%	92%	81%	(39)	16	31.8	2
	June	86%	14	0	17; 0	6.6	0	1,249	1	0	$ 44,902,557	101%	91%	81%	(36)	0	20.6	4
	July	95%	8	0	310; 0	6.2	0	1,245	7	0	$ 44,247,503	102%	93%	81%	(52)	0	26.9	4
	Aug	88%	10	0	45; 0	6.3	0	1,275	4	0	$ 45,392,935	101%	92%	84%	(69)	0	32.2	3
Consecutive Months at Green		0	4	4	8	159	16	143	0	9	156	10	17	7	0	3	8	0
Metric Owner		O'Neill	Pugsley	Dean	Dean	Pugsley	Pugsley	Pugsley	Dean	Horchar	Fraraccio	Fraraccio	Fraraccio	Dean	Dean	Howard	Howard	Howard

Metric	Explanation
Stewardship	In August we were closed for a week to perform much needed facility maintenance following our busy summer schedule (which is typical) and this year we did not conducted any significant programming during the final two weeks in August.
Reclaimed Water	Distribution of IQ Water was impacted on August 13 and 14 when a lightning strike imparired function of our main IQ pump station. This impacted deliveries to 10 of our 13 IQ Water customers. Also on Aug 2 and 16 an issue at our IQ Water booster pump station impacted deliveries to Jupiter Hills.
Capital Projects (time)	Our Capital Program schedule continued to degrade. Anticipated improvement did not occur in August due to continued delays driven largely by delayed material deliveries, e.g., delivery of new vehicles, delivery of key materials and equipment for Headworks Generator and IW Pump Emergency Generator connection. Improvement is anticipated with award of the Control Panel Replacement professional engineering services contract (October) and execution of Change Orders for certain projects. See Kris' report for more information.
River Water Quality	High fecal coliform bacteria (>200 cfu/100 ml) were observed at Stations 65 (NW Fork @ Kitching Creek mouth), 67 (NW Fork @ Trapper Nelson's dock), and 100 (NW Fork @ Cypress Creek mouth). See Bud's report for additional details.

LOXAHATCHEE RIVER DISTRICT
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D. Albrey Arrington, Ph.D. EXECUTIVE DIRECTOR loxahatcheeriver.org

MEMORANDUM

TO: Governing Board

FROM: Administration Staff

DATE: September 15, 2022

SUBJECT: Consent Agenda

All items listed below are considered routine and will be enacted by one motion. There will be no separate discussion of these items unless requested by a Board Member or citizen, in which event, the item will be removed and considered under the regular agenda.

This month's consent agenda consists of the following items:

A. Manual of Minimum Construction Standards and Technical Specifications – to ratify revisions
B. Money Purchase Plan and Trust (Retirement Plan) – to approve minor revision
C. Personnel Policies & Procedures Section 5.1 Retirement Plan – to approve revision
D. Annual Lawn/Landscape Maintenance Services (Terracon Services, Inc.) – to approve annual purchase order
E. Bill Printing and Postage (Arista) – to approve annual purchase order
F. Biosolids Hauling (Synagro) – to approve annual purchase order
G. Biosolids Processing (Solid Waste Authority) – to approve annual purchase order
H. Bulk Fuel Procurement – to authorize annual bulk fuel purchase
I. Chlorine (Allied Universal) Supply – to award contract
J. First Billing Merchant Service – to approve purchase order
K. Hauling of Liquid Domestic Wastewater Sludge and Collection System Debris – to approve annual contract extension
L. Home Depot Open Purchase Order – to approve annual purchase order

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M. Low Pressure Sewer System General Construction Services – to approve annual contract extension
N. Purchase of Odor and Corrosion Control Chemicals and Services (Evoqua) – to approve annual purchase order
O. Solids Dewatering Polymer (SNF Polydyne) Purchase – to approve annual purchase order
P. Fixed Asset Disposal – to approve disposal
Q. Change Orders to Current Contracts – to approve modifications

Should you have any questions regarding these items, I would be pleased to discuss them further with you.

The following Motion is provided for Board consideration:

"THAT THE GOVERNING BOARD approve the Consent Agenda of September 15, 2022 as presented."

Signed
D. Albrey Arrington, Ph.D.
Executive Director

LOXAHATCHEE RIVER DISTRICT
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D. Albrey Arrington, Ph.D. EXECUTIVE DIRECTOR loxahatcheeriver.org

MEMORANDUM

TO: D. Albrey Arrington, Ph.D., Executive Director

FROM: Kris Dean, P.E., Deputy Executive Director / Director of Engineering Services and Courtney Marshall, P.E., District Engineer

DATE: September 15, 2022

SUBJECT: Manual of Minimum Construction Standards and Technical Specifications – September 2022 Update

In April of 1983 the Governing Board approved the District's first "Manual of Minimum Construction Standards and Technical Specifications". Since the initial adoption, this document has been updated from time to time as codes, rules, materials, and methods have changed and improved over time.

Staff have implemented a Standards Review Committee to manage change control of the construction standards and technical specifications. This Committee meets quarterly and follows strict procedures governing change requests, investigation, recommendation/authorization and implementation of changes to the construction standards and technical specifications.

This September, Engineering Services is updating the Manual of Minimum Construction Standards and Technical Specifications. Detailed updates can be reviewed in the Manual of Minimum Construction Standards and Technical Specifications, as summarized below and attached:

1. Throughout document – Typographical and numbering errors
2. Section 10.02 – Updated number of copies of FDEP permit applications required for District files to be consistent with current workflow process.
3. Section 10.04.4 – Updated AutoCAD version requirement to be consistent with updates to Standard Detail SD-29.
4. Section 110.03 – Updated to appropriate ASTM reference for smaller pipe diameters.
5. Section 150.10 – Updated terminology to be consistent throughout document.
6. Section 160.04 – Updated terminology to be consistent throughout document.
7. Section 160.14 – Removed preferred system integrator requirements.
8. Section 200 – Revised current officers.
9. Standard Detail COL-BBA – New Standard Detail for internal use only to retrofit alarms at existing lift stations only.
10. Standard Detail LP – Index updated to include new Standard Detail LP-17A.
11. Standard Detail LP-12 – Corrected Barnes Pump Model to most updated version.

12. Standard Detail LP-16 – Updated to require same enclosure for both standard Commercial Duplex and Low-Flow Option.
13. Standard Detail LP-17A – New Standard Detail for consistency. LP-17A is the electrical schematic detail that corresponds with Standard Detail LP-12 ALT.
14. Standard Detail LP-22 – Notes added to clarify valves within service box.
15. Standard Detail LP-23 - Notes added to clarify valves within service box.
16. Standard Detail LP-31 – Updated valve box to preferred make and model.
17. Standard Detail LP-34 – Updated notes to further clarify pressure testing procedures.
18. Standard Detail SD-6 – Note 9 added to further clarify cut and cap procedures.
19. Standard Detail SD-7 – Note 9 added to further clarify cut and cap procedures.
20. Standard Detail SD-8 – Note 9 added to further clarify cut and cap procedures.
21. Standard Detail SD-9 – Note 9 added to further clarify cut and cap procedures.
22. Standard Detail SD-14 – Footnote added to clarify dimensions shown with asterisk.
23. Standard Detail SD-23
    a. General clean-up of notes for consistency and clarity.
    b. Updated offset ARV assembly to be mounted in center of access manhole, rather than on the side, for ease of maintenance.
    c. Updated notes to specify that all materials, hardware, etc. within the manhole shall be minimum 304 stainless steel.
24. Standard Detail SD-24
    a. General clean-up of notes for consistency and clarity.
    b. Updated notes to specify that all materials, hardware, etc. within the manhole shall be minimum 304 stainless steel.
25. Standard Detail SD-25
    a. General clean-up of notes for consistency and clarity.
    b. Updated notes to specify that all materials, hardware, etc. within the manhole shall be minimum 304 stainless steel.
    c. Updated enclosure to a larger box and centered ARV within the enclosure mounted on a concrete pedestal for ease of maintenance / access.
    d. Updated detail to show valve box and offset force main connection for consistency.
26. Standard Detail SD-29 – Updated references to latest version of AutoCAD and electronic submittal requirements.
27. Standard Detail SD-31
    a. General clean-up of notes for consistency and clarity.
    b. Updated concrete slab to have consistent width between the control panel and valve vault.
    c. Updated concrete slab to be 6” thick with reinforcement.
    d. Added note for required 48” minimum required clearance between control panel and wet well hatch opening.
    e. Added note regarding fall through safety prevention system requirements.
28. Standard Detail SD-32 – Added RTU Breaker.
29. Standard Detail SD-33 – Added RTU.

30. Standard Detail SD-34 – Updated specified alarm horn and added RTU Breaker (RTUB).

Staff recommend the following motion:

"THAT THE DISTRICT GOVERNING BOARD ratify and approve the Loxahatchee River Environmental Control District's "Manual of Minimum Construction Standards and Technical Specifications", as of September 15, 2022, and authorize the District Engineer and Executive Director to update the Construction Standards and Technical Specifications from time to time, and periodically present it to the Governing Board for ratification and approval."

LOXAHATCHEE RIVER

ENVIRONMENTAL CONTROL DISTRICT

MANUAL OF MINIMUM CONSTRUCTION

STANDARDS AND TECHNICAL SPECIFICATIONS

FOR

LOXAHATCHEE RIVER DISTRICT

D. Albrey Arrington, Ph.D.
Executive Director

Kris Dean, P.E.
Deputy Executive Director/Director of Engineering

Courtney Marshall, P.E.
District Engineer

Revision: ~~October 2021~~September 2022

TABLE OF CONTENTS

SECTION 10

ADMINISTRATIVE AND GENERAL

10.01 General

The purpose of this manual is to provide the minimum construction standards for design and construction work associated with wastewater systems within the District and is intended to supplement the requirements of other regulatory agencies. The design engineer is to use good engineering judgment in the design of wastewater systems. The design engineer and the contractor are responsible for providing sound, workable, and long lasting systems.

The intent of this section is to provide members of the development community with a brief introduction to the Loxahatchee River Environmental Control District, also referred to as "District", its function, and procedures.

The Loxahatchee River Environmental Control District is an agency of government which was created in 1971 for the purpose of providing utility and other environmental services within the 72 square mile basin of the Loxahatchee River. Currently, the District owns, operates, and regulates the regional wastewater system serving Tequesta, Jupiter, Juno Beach, Juno, and the unincorporated areas of northern Palm Beach and southern Martin Counties.

The District offices are located at 2500 Jupiter Park Drive, Jupiter, Florida. The offices are open between 8:00 A.M. and 5:00 P.M. weekdays. The telephone number during working hours is (561) 747-5700. For emergency situations outside of normal office hours, the telephone number is (561) 747-5708. The District website can be found at http://www.loxahatcheeriver.org.

With specific regard to new development, the District's legislated policy is to provide the required utility services to the area now and as it continues to grow. It is, therefore, the agency's intent to work closely with new development to assure that the utility services can be provided in a manner which is both timely and consistent with the standards and specifications set forth in this manual.

Please note that the District's "Manual of Minimum Construction Standards and Technical Specifications" may change from time to time. All projects will be subject to the current District, local, state and federal rules and regulations at the time of submittal of final engineering drawings for approval.

10.02 Procedures Prior to Construction

10.02.1 Introductory Meeting

It is highly recommended that the project representative (s) (owner, engineers) meet with the District's Deputy Executive Director early in the planning stages of the development. At such time a determination of sewer and reuse water availability will be made, and financial impacts will be reviewed.

10.02.2 Developer Agreement

The submittal of a properly executed agreement, along with payment for certain charges, is required before the District will review the engineering plans. Copies of the District's Standard Developer Agreement and Chapter 31-10 F.A.C., which addresses the charges, are available online or at the District offices.

10.02.3 District Installed Facilities

During the introductory meeting the developer may wish to discuss the availability of District installed regional and sub regional facilities to serve the proposed project, although, this program is limited to larger developments.

The District currently maintains a program where sub regional lift stations may be constructed by and paid for by the District. A sub regional facility must be designated and approved by the District Governing Board. Staff will take no action for recommending designation of a facility for installation until a developer agreement is executed and all fees are paid.

Staff reviews and assesses the project based upon economic feasibility, consistency with the District Master Plan and its current and future demand. To promote stable and effective communication between the District and the Developer, we will require the Developer to coordinate all communication through the Engineer of Record.

In designating a sub-regional facility, the following items are the responsibility of the owner/developer:

Provide the District with any project information necessary for the design of lift station(s) and force mains(s).

Provide, at developer's expense, all necessary electrical service to the lift station site in conjunction with construction activities.

Provide suitable access to lift station and force main sites for District and contractor's vehicles and equipment. Paved asphaltic concrete or reinforced concrete access drives will be provided (Min.16' wide) prior to acceptance.

Provide appropriately sized sanitary sewer gravity lines that are necessary to serve adjoining properties in conjunction with lift station construction. Sewer lines to adjoining properties must be activated concurrent with lift station, or upon demand from the District.

The last collection manhole, just upstream of the lift station, should be placed in a manner to minimize road, lane or sidewalk closures should by-pass operations be

needed at the lift station. The District may require this last collection manhole to be placed inside the lift station easement.

Provide all clearing, grubbing and rough grading of the lift station and force main sites prior to construction.

Provide survey requirements and staking of the lift station and force main upon request from the District. Staking shall include provision of one stake at center of the proposed wet well, with 50' offsets and bench mark. Force main shall be staked at center line with 10' offsets every 100 feet, with a set bench mark. All survey work shall be performed by a professional surveyor licensed in the State of Florida.

Developer shall convey a deed to the lift station property prior to construction, and all required easements as follows:

Permanent Easements:

a. Lift Station - 40' x 40'
b. Force Mains - 10' wide minimum
c. Gravity Mains - 15' wide minimum for sewers

Temporary Construction Easements:

a. Lift Station - 100' x 100'
b. Force Mains - 30' wide minimum
c. Gravity Mains - 50' wide minimum

Developer's contractor will be responsible to make gravity line connections from the system collection manhole to the lift station after the construction of the wet well has been completed.

District staff will work in conjunction with the developer's project engineer to plan for the service area. Station design will be performed by the District. Construction will be contracted for by the District and inspected by District personnel.

10.02.4 Developer Installed Facilities - Plan Review and Approval

An initial electronic plan submittal (PDF) is recommended. Submittal should contain; one (1) complete set of plans including sewer, reuse, water and drainage systems, and paving and grading details. Upon review, the design engineer will be notified of acceptance or comments which need to be addressed. District staff will work with the Developer's Engineer of Record to address the final design of Developer installed facilities.

Final submittal for approval will require additional plan sets, to include one electronic (PDF), two (2) hardcopy full-size (24x36) sets for District files, ~~four~~ two (42) sets for Florida Department of

Environmental Protection and/or Palm Beach County Health Department for District files, plus any additional sets required by the engineer or owner.

District approval of utility plans and specifications, as well as sign off on the Florida Department of Environmental Protection/Health Department application, is required.

Plan review will be for technical sufficiency of design for incorporation into the District system. This review, as well as plan approval by the District, does not relieve the design engineer of his liabilities or responsibility for a properly detailed design. District Engineering staff will be available to work with the design engineer to assure the plans meet the requirements set forth in this manual.

All plan submittals must be signed and sealed by a Professional Engineer, registered in the State of Florida. Plans which are marked "Preliminary" or "Draft" will not be approved.

Supplemental data to be furnished with the final plans submitted for approval includes the following:

1. Project Summary

    a. Number of residential units being served or non-residential uses.
    b. Number of Manholes
    c. L.F. of Gravity Main (for each pipe size)
    d. L.F. of Force Main (for each pipe size)
    e. Number of Lift Stations and depth of each

2. Basis of determination of design capacity and design flow.

3. Calculations and plot of system head curves.

4. Calculations of pump cycle times.

5. Wet well floatation calculations.

6. Landscaping plan that includes the proposed sewer facilities on the plan to determine if the necessary setbacks are provided.

7. Preliminary phasing plan (for entirety of project) that includes a table indicating number and type of lots (i.e., multifamily, single family, etc.) and the year those lots require DOH certifications.

~~10.02~~10.03 Developer Installed Facilities - Procedures During Construction

~~1.03.1~~10.03.1 Periodic Inspection

Throughout construction, the developer will look to his consulting engineering firm for progress by periodic inspections. District Engineering staff will periodically check the site during construction for progress. If problems are encountered during construction, it will be the developer's responsibility through his engineers, to resolve them to the District's satisfaction. Any revision of substance to the approved plans shall be submitted to the District for approval prior to incorporation into the work.

~~1.03.2~~10.03.2 Pre-Final Inspection Submittals

1. Approximately 60 days prior to construction completion, the Developer's Engineer of Record shall provide the Deputy Executive Director the following for review and approval:

    a. A signed and sealed cost of construction of the sewer improvements. This information will be used to establish the value of the maintenance bond.

    b. A final Phasing Plan. The Phasing Plan should encompass the project in its entirety and is solely at the discretion of the District as to timing and extent of phases.

2. Upon receipt of the above information the Deputy Executive Director will prepare a letter to the Owner, with copy to the engineer, with the Bill of Sale and easement forms prepared for execution, along with a listing of administrative items to be provided prior to District inspection of facilities for acceptance.

~~1.04~~10.04 Developer Installed Facilities - Procedures Following Construction

~~1.04.1~~10.04.1 Project Completion

A project is not considered complete and prepared for District final inspection until such time as:

1. All sewer system construction is completed in accordance with plans and specifications and inspected and certified by the engineer.

2. Where sewers are constructed in paved areas, at least the 1st lift of asphalt has been provided.

3. Areas over lines and laterals, which are not proposed to be paved, shall be brought to finish compacted grade.

~~1.04.2~~10.04.2 Project Completion Submittals

Upon Completion of Construction, but before District final inspection, submit the following items in forms acceptable to the District:

1. Bill of Sale

2. Grant of Easement

3. Maintenance Bond: From a surety company and executed by an attorney-in-fact for the surety company with a certified copy of his Power-Of Attorney attached to the Bond; or a

4. Letter of Credit: From a financial institution and in a form acceptable to the District.

5. Record Drawings: Submit one (1) blackline copy of the record drawings, signed and sealed by a Florida licensed Professional Surveyor & Mapper. Record drawings must comply with LRD's standard detail SD-29 "Record Drawing Submittal Guide".

6. Department of Environmental Protection Certificate of Completion Executed by Owner and Certifying Engineer.

7. Letter of Certification from the Engineer of Record

8. Performance Test Results: infiltration/exfiltration, pressure, leakage and pump start-up test records. All documents must be signed and sealed by the Engineer of Record.

9. Copy of Site Plan and Recorded Plat indicating all building numbers and street names.

10. Payment for all buildings connected to the system.

~~1.04.3~~10.04.3 Final Inspection

After the owner and project engineer have provided the documents as outlined in Section 1.04.2, and all punch list items have been remedied, the District engineering staff will conduct a final inspection and recommend acceptance or denial. If acceptance is denied, a letter will be sent to the project engineer advising of the denial and reasons for such. Subsequently, the project engineer should address the comments and request scheduling a final reinspection. It should be noted that after the final inspection, any comments to the initial Record Drawing submittal shall be provided to the Engineer of Record for any remedies.

~~1.04.4~~10.04.4 Final Record Drawings

After District Engineering staff has completed the final inspection and all work is to the satisfaction of the District Engineer, the final Record Drawings shall be submitted to the District, as follows:

1. Two (2) final black line record drawings, signed and sealed by a Florida licensed Professional Surveyor & Mapper. This record drawing shall meet the technical standards

for "Record Survey" set forth by the Florida Board of Professional surveyors and mappers, pursuant to Chapter 472 of the Florida Statutes and Chapter 61G17-6, Florida Administrative Code.

2. One ~~(1) compact disc~~electronic submittal with the record drawing in AutoCAD ~~2008~~ 2020 or later format and PDF format. Only one (1) AutoCAD file shall be accepted containing the entire record drawing (additional files used for x-referencing are acceptable) and one Adobe Acrobat file with the entire record drawing as seen on the paper copy. The District will no longer accept separate AutoCAD and/or Adobe Acrobat files for separate record drawing pages. The AutoCAD files must be established in state plane coordinate system, NAD 83, Florida East Zone. The vertical datum referenced shall be NGVD 29.

~~1.04.5~~10.04.5 One Year Maintenance Bond and Inspection

Prior to acceptance by the District, a maintenance bond which will remain in effect for one year from the date of District acceptance of the system, must be provided to the District. Shortly before the expiration of the one-year maintenance bond, the District will reinspect the system in a manner similar to the final inspection (i.e., broken pipes, deflection, infiltration, etc.) The District will advise the developer of any defects found, unless of an emergency nature, during this inspection and will require correction to be made prior to expiration of the maintenance bond.

Should adequate progress, in the opinion of the District, not be made in correcting the deficiencies, the District will look to the bonding company to pay for corrective action taken by the District.

A Letter of Credit drawn upon a financial institution licensed in the State of Florida, and in a form acceptable to the District may be provided in lieu of a maintenance bond.

~~1.04.6~~10.04.6 District Acceptance

Upon satisfactory finding of the final inspection, the Department of Environmental Protection/Health Department Certification of Completion will be executed by the Executive Director, thereby, accepting the system for operation and maintenance.

~~1.04.7~~10.04.7 Operation and Maintenance

With the exception of service laterals which lie beyond right-of-way or easement lines, or in common areas of ownership, the wastewater system serving the development will be operated and maintained by the District's personnel, who are well trained and responsive to the needs of the community.

~~1.04.8~~10.04.8 Utility Billing

The District's accounting department will continue to work with the Developer in the collection of connection charges as new buildings are tied into the system, and in the billing of quarterly service charges.

~~1.05~~10.05 Definitions and Abbreviations

The term "Owner" or "District" shall mean the Loxahatchee River Environmental Control District.

The term "Director" shall mean the Executive Director of the Loxahatchee River Environmental Control District.

The term "Engineer" or "Design Engineer" shall be the engineer registered in the State of Florida that signs and seals the plans of a developer or other person or entity.

The term "District Engineer" shall be the engineer designated by the District, whether acting directly or as an authorized agent of the District, acting within the scope of duties entrusted to them.

The abbreviation listed below shall have the meaning set forth opposite each:

AASHTO	American Association of State Highway Transportation Officials
ACI	American Concrete Institute
ANSI	American National Standards Institute
ASCE	American Society of Civil Engineers
ASTM	American Society for Testing and Material
AWWA	American Water Works Association
NEC	National Electric Code
NEMA	National Electric Manufacturers Association
AWG	American or Brown and Sharpe Wire Gage
NPT	National Pipe Thread
WOG	Water, Oil, Gas

END OF SECTION 10

SECTION 20

DESIGN CRITERIA

20.01 General

The requirements of this section are a minimum and nothing herein shall be construed to eliminate consideration of a design based on a rational procedure not covered by such requirements. Standards or minimum requirements set forth in this Manual are not intended to relieve the Developer, Contractor, or Design Engineer from complying with good engineering and construction practices under specific conditions which require a higher degree of procedure, standards, or requirements. Where the Developer, Contractor, or Design Engineer is not capable of following the requirements of the Manual due to certain site conditions, any deviation from the requirements set forth in the Manual shall first be approved by the District. It is intended that the requirements of this section shall be applicable in all cases where the facilities being constructed or to be constructed shall be owned and/or operated and maintained by the District.

20.02 Design Capacity

Gravity sewer systems should be designed for the estimated ultimate tributary population. Parts of the system that can be readily increased in capacity such as lift stations may be submitted for approval based on phased implementation. The basis of design for all projects shall accompany the plan documents.

20.03 Design Flow

Sewer system Average Daily Flow (ADF) designs shall be based on the design flows as listed in Chapter 64E-6 of the Florida Administrative Code.

20.03.1 Peak Hourly Flow

Peak Hourly Flow (PHF) shall be utilized for the sizing of all gravity sewers, force mains and lift station pump sizing. Peak hourly flow peaking factor (PF) shall follow Figure 1 - Ratio of Peak Hourly Flow to Design Average Flow, of the "Recommended Standards for Wastewater Facilities", by the Waste Water Committee of the Great Lakes – Upper Mississippi River Board of State and Provincial Public Health and Environmental Managers, latest edition.

For low pressure sewer systems, all low pressure mains and LRD's approved grinder pump systems (centrifugal) shall be sized based upon the estimated peak design flow. The estimated peak design shall follow either Part 4 – Design Flows, of the "Design and Specification Guidelines for Low Pressure Sewer Systems", by the FDEP, latest edition or Chapter 2, "Manual – Alternative Wastewater Collection Systems", by the EPA, latest edition.

20.04 Gravity Sewers

20.04.1 New Construction

The basic design criteria for gravity sewers shall be as follows:

Pipe material – all new gravity sewer shall be of PVC construction. Use of epoxy coated D.I.P. will only be allowed with prior approval from the District Engineer.

The minimum gravity sewer pipe line diameter – All new gravity sewer mains (manhole to manhole) shall be a minimum of 8-inches in diameter.

The minimum depth of cover shall be as follows: 3'-6" for DIP or PVC C-900 and 4'-0" for PVC SDR-26. Any cover that is proposed to be less than 4'-0" must be given prior approval by the Director of Engineering.

Straight alignment and constant slope between manholes.

All manholes shall be precast concrete with monolithic bases and concentric conical cone sections.

Manholes are required at the end of each line; at all changes in grade, size or alignment. Stubs eight (8) inches or larger will require a manhole at the terminus point.

Manholes shall be spaced not greater than 400 feet for sewers fifteen (15) inches in diameter or less, 450 feet for sewers eighteen (18) inches in diameter or greater.

Five-foot drop manholes (internal type) are to be provided for a sewer entering a manhole at an elevation twenty-four 24 inches or more above the lowest manhole channel invert. (See Standard Details)

A positive 0.1-foot grade differential shall be provided between the upstream and downstream invert on all manholes.

All sewers shall be designed and constructed to give mean velocities, when flowing full, of not less than 2.0 feet per second, based on Kutter's formula using an "n" value of 0.013. The following are minimum slopes allowed:

Sewer Size	Slope in Ft/100 Ft
8-inch	0.40
10-inch	0.28
12-inch	0.22
15-inch	0.15
18-inch	0.12
21-inch	0.10
24-inch	0.08
27-inch	0.067
30-inch	0.058
36-inch	0.046

When possible, slopes at least 10% above the minimums shown are preferred. However, in no case will slopes be designed which would provide a mean velocity less than 2.0 feet per second when flowing full, based on an "n" value of 0.013.

When a smaller sewer joins a larger one, the invert of the larger sewer should be lowered sufficiently to maintain the same energy gradient. An approximate method for securing these results is to place the 0.8 depth point of both sewers at the same elevation.

Intersecting sewers shall not meet at an alignment angle of less than 90 degrees to downstream flow.

Manholes deeper than 14 feet from the lowest invert to the manhole rim, manholes with a force main discharge, manholes with inside drops and the last collection manhole just upstream of a lift station, shall be given a minimum 0.5-inch coat of Sewper Coat, Strong Seal, Refratta HAC 100 or other approved calcium aluminate corrosion barrier.

The last collection manhole, just upstream of the lift station, should be placed in a manner to minimize road, lane or sidewalk closures should by-pass operations be needed at the lift station. The District may require this last collection manhole to be placed inside the lift station easement.

All gravity sewers shall be placed in the center of any roadway and within any easements. The minimum gravity sewer easement is 15' wide.

No landscaping or surface features (i.e., walls, fences, fountains, etc.) shall be placed in a manner that would adversely affect access to utility easements or District infrastructure. Trees shall be a minimum of 10' away from any gravity sewer main or service line/lateral. This may be reduced to 7' with the use of an approved root barrier system.

All gravity sewer mains shall be a minimum of 10' horizontally from any structures. This setback shall be measured from the outside edge of the pipe to the nearest part of the structure, including underground (i.e., footers) or above ground (i.e., roof overhangs) features.

In addition to the above requirements, gravity sewer design shall follow Recommended Standards for Wastewater Facilities, at a minimum.

20.04.2 Adjustments to Existing Sewer Infrastructure

There may be instances where an area is being redeveloped or when a new developer takes ownership of a project from a previous developer and wishes to make modifications to already constructed, but not yet activated sewer facilities. The following criteria shall apply:

It is advised that developers of redesigned projects meet with the District Engineer to conduct a pre-application meeting and/or conduct due diligence prior to submitting final engineering plans to discuss the proper procedure for obtaining approval for any modifications.

This manual is updated from time to time, thus any comments provided at a pre-application/due diligence meeting should be considered conceptual in nature and may no longer be applicable by the time final engineering drawings are submitted to the District for approval (See Section 1.01).

Services may be abandoned on a gravity run (manhole to manhole) and the service must be entirely removed, including the mainline wye fitting. The repair(s) must be completed using two sleeves and one spool piece per abandoned service.

Lift stations and all related appurtenances must be brought up to current LRD standards if they haven't been installed.

LRD will accept all gravity and force mains as constructed and re-inspect them based upon the LRD standards at the time the project was approved. However, additional appurtenances may be required to be installed, such as air release/vacuum valves or inline valves should the District Engineer require them. Additionally, all setbacks shall be based upon the current LRD standards.

LRD will accept all previously agreed to sewer easement widths, though the extent of the easements may require modifications should any infrastructure be removed or added.

Any new infrastructure proposed by the new developer shall meet all current LRD standards.

20.05 Submersible Pumping Stations

The basic design criteria for pump stations are as follows:

Sized to handle the peak hourly flows from the tributary areas with the largest pumping unit out of service (firm capacity).

Total dynamic head based on static head, lift station friction losses and pipeline friction factor (C) of 120. Pumping units shall be capable of operating based on a C=100 and not "running out" based on a C=140.

Pumping units capable of passing spheres of at least three (3) inches in diameter.

Under normal conditions, pumps operate under a positive suction head.

Controls included to automatically alternate the pumps in use.

Maximum pump speed of submersible pumps shall not be greater than 1800 rpm unless specifically allowed otherwise by the District Engineer.

All electrical and mechanical equipment shall be installed 1 foot minimum above the Base Flood Elevation.

Lift stations shall be provided with remote telemetry (Data Flow Systems radio telemetry or cellular telemetry) and wetwell level instrumentation.

Detailed specifications and drawings for submersible pump stations and appurtenances are included elsewhere in this manual. Site specific designs and requirements not covered under this manual will be reviewed on a case by case basis. Additional design criteria for these stations are contained in the "Recommended Standards for Wastewater Facilities", by the Water Supply Committee of the Great Lakes – Upper Mississippi River Board of State and Provincial Public Health and Environmental Managers, latest edition as referenced by the Florida Department of Environmental Protection.

All wet wells shall be designed to resist flotation based on a base flood event plus 1 foot at the site, without consideration of the weight of the pumps, with a safety factory of at least 1.0. Flotation calculations based on a unit weight of concrete of 130 pounds per cubic foot shall be submitted to the District for review with all pump station plans

Wet well cycle times shall be 10 minutes minimum 30 minutes maximum; based on the formula:

$$T = \frac{V}{Q-S} + \frac{V}{S}$$

Where:

T = Cycle time (minutes)
V = Effective volume of wet well (gallons)
Q = Pumping rate (gpm)
S = Average daily flow (gpm)

All lift stations shall be given a 1.0-inch coat of Sewper Coat, Strong Seal, Refratta HAC 100 or other approved calcium aluminate corrosion barrier.

20.06 Force Main

The basic design criteria for force mains are as follows:

Pipe material – C-900 PVC, epoxy lined ductile iron pipe or HDPE (DR-11 min).

Minimum size - 4-inch diameter.

Minimum velocity - 2 feet per second.

Maximum velocity - 8 feet per second.

Minimum depth of cover - 3 feet.

Branches of intersecting force mains shall be provided with appropriate valves such that one branch may be shut down for maintenance and repair without interrupting the flow of other branches. Stubouts on a force main, placed in anticipation of future connections, shall be equipped with a valve to allow such connections without interruption of service.

At all times, the force main shall be laid per the design elevations approved by the District. An automatic air release valve shall be placed at all high points of all force mains with a diameter of (4) inches or larger, as indicated on the construction plans and approved by the District.

All automatic air release/air vacuum valves shall be placed in a manhole as provided in the District's standard details.

Force main design drawings are to indicate elevations at all high points and all low points with constant slopes in between such points. Low point drainsshall be placed at all low points in the force main profile.

Approved restrained joints shall be provided at all force main bends.

Terminal ends of force main (permanent or temporary) shall be as shown on the Standard Details.

20.07 Separation Requirements

Sanitary sewers crossing under water mains shall be laid to provide a minimum vertical separation of twelve inches between the invert of the upper pipe and the crown of the lower pipe. Where this minimum separation cannot be maintained, the crossing shall be arranged so that the joints are equidistant from the point of crossing with no less than ten (10) feet between any two joints and both pipes shall be D.I.P. Where there is no alternative to sewer pipes crossing over a water main, the criteria for the minimum separation between lines and joints in the above, shall be required and both pipes shall be D.I.P. irrespective of separation.

Where storm sewers cross above or below sanitary sewer mains, the minimum vertical separation between the outside of the storm sewer main and the outside of the sanitary sewer main is (12) inches. Where the minimum separation cannot be maintained, the sewer main shall be constructed of DIP at the conflict with one full joint (min. 20 feet) centered on the conflict for pressure mains and C-900, DR18 inside DI or steel sleeve for gravity mains.

The minimum vertical separation between sanitary sewer mains and any other utility other than those listed above is 12 inches. Vertical separations of less than 6 inches, will not be accepted.

Maintain 10 feet horizontal distance between water mains, storm pipes and sanitary sewer mains unless reduced separation is allowed by the FDEP, Palm Beach County Health Department and the District Engineer. Separations greater than ten feet may be required for drainage pipes larger than 48” in diameter.

20.08 Sewer Use Regulations

The Loxahatchee River Environmental Control District has adopted certain rules and regulations regarding the acceptability and pretreatment requirements for certain types of wastewaters. These rules and regulations are published in Chapter 31-13 of the District Rules and may be amended from time to time. Prospective users of the system should contact the District Deputy Executive Director for information regarding the above referenced rules and the Director of Operations for compatibility of the anticipated wastewater with the District’s facilities.

END OF SECTION 20

SECTION 30

MISCELLANEOUS REQUIREMENTS

30.01 Lines, Grades and Measurements

Alignment and grade of all pipe, tunnels and borings shall be continuously controlled by use of lasers or other acceptable method. Laser alignment and grade through the pipeline is the preferred method. The District Engineer shall be permitted at any time to check the lines, elevations, reference marks, laser, etc., set by the Contractor or the Design Engineer.

30.02 Work to Conform

The maximum allowed vertical deviation of any single gravity pipe, tunnel or boring from plan grade shall be three percent (3%) of inside diameter. No single gravity pipe shall vary in horizontal alignment right or left, from the pipe centerline by more than five percent (5%) of inside diameter. Force main joint deflections shall be limited by AWWA Standards and manufacturer's recommendation.

30.03 Pipeline location

Pipelines shall not be located closer to an existing or proposed structure than the horizontal distance obtained when drawing a 45-degree angle from the proposed invert of the pipeline to bottom outside face of the footing. In no case shall this distance be less than ten (10) feet. Pipelines shall be located as indicated on the drawings, but the Design Engineer is responsible to make such modifications in location as may be found desirable to avoid interference with existing structures or for other reasons, which are not material to the interest of the District and which do not otherwise conflict with any other statement or criteria set forth in this manual. The District should be notified of such changes in a timely fashion and such changes shall be recorded on Record Drawings.

30.04 Pipe Adapters

When joining pipes of different types, District approved transition sleeves, adapters, and couplings shall be used.

30.05 Fittings and Stoppers

Branches, stub-outs and fittings shall be laid as indicated in the Standard Details and shown on the approved drawings. Open ends of pipe and branches shall be closed with nonmetallic "wing nut" expansion stoppers secured in place in an acceptable manner. Stoppers shall be designed to remain in place and watertight during infiltration tests.

30.06 Service Lines

a. General

Service lines shall be as shown on the Standard Details. Service lines for a single lot shall be a minimum of 4 inches in diameter; for two lots , a minimum of 6-inches in diameter. Where three or more ~~lotsare~~lots are connected to a single service line, the service line shall be considered a gravity sewer, shall be a minimum of 8-inches in diameter, and shall be in accordance with the criteria covering District maintained gravity sewers. Exceptions to these requirements may be made in specific instances where constructability, environmental impacts or excessive costs require an alternate to these criteria. These exceptions shall be considered non-conforming connections and subject to correction to District Standards if and when criteria used in determining constructability, environmental impacts or excessive costs are no longer valid.

b. Easements, Implied Grant of Way of Necessity and Statutory Way of Necessity

If a residential property requires an easement across another residential property to gain access to District sewers the easement shall be conveyed to the District using the District's Standard Easement Agreement. Easements shall only be allowed when no District maintained sanitary sewer is available for connection in public right of way or existing easements adjacent to the property **and** constructability, environmental impacts or excessive costs render construction of new sewer facilities in public right of way or existing easements adjacent to the property non-viable.

The District recognizes Florida Statutes 704.01, (1) Implied grant of way of necessity, and (2) Statutory way of necessity, may be applicable in providing sanitary sewer service to a property.

In the case of Implied Grant of Way of Necessity there may be instances where a sanitary sewer service existed to a property and that property was then divided into multiple properties each using the existing sanitary sewer service. In these instances the District recognizes the Implied Grant of Way of Necessity for each property's use of the sanitary sewer service under a "grandfather" clause but considers the connection/s non-conforming in that properties may be served by facilities not owned and maintained by the District and/or properties may be served by facilities that may be inadequately sized and/or one property may be served by facilities that cross another property and are not in a District Standard Easement. In these instances, the District shall require the sanitary sewer connections using an Implied Grant of Way of Necessity for sewer service be corrected to current District Standards when renovation or redevelopment of any of the affected properties occurs.

In the case of Statutory Way of Necessity there may be instances where a property is shut off or hemmed in from access to sanitary sewer service by lands, fencing or other improvements. In these instances the District, with agreement from the shut off or hemmed in property, may act on behalf of the shut off or hemmed in property and use and maintain an easement over, under, through and upon the lands which lie between the said shut-off or hemmed -in lands and public right of way or existing easements to supply sanitary sewer service to the shut-off or hemmed-in land granted the shut-off or hemmed-in land is using the lands that lie between for personal ingress and egress. The District considers sanitary sewer connections using Statutory Way of Necessity to be non-conforming in that properties are served by facilities that cross another property and are not in a District Standard Easement. In these instances the District shall require the sanitary sewer connections using a Statutory Way of Necessity for sewer service be corrected to current District Standards when renovation or redevelopment of the property over which a Statutory Way of Necessity is used occurs, or when a public right of way or utility easement becomes accessible to the shut-off or hemmed in property.

c. Maintenance Responsibility

The service line (lateral) cleanout will usually delineate the point of responsibility between the District and the property owner; however, the following variations do exist:

1. Multi-family Units - Public right-of-way - Owner's responsibility to the right-of-way line.

2. Multi-family Units - Non-Public right-of-way - Owner's responsibility to the main line connection.

3. Commercial Buildings - Owner's responsibility to the main line.

4. Condominium with Common Areas - Non-Public right-of-way Owner's responsibility to the main line connection.

5. Condominium with Common Areas Adjacent to Public right-of-way - District assumes responsibility within the public right-of-way.

30.07 Service Line Markers

A service line marker shall be installed 12-inches {minimum} above the service wye adjacent to the cleanout of each service line. The service line markers shall be Electronic System, Sanitary Marker 1258, as manufactured by 3M.

30.08 Bolts, Anchor Bolts, and Nuts

Anchor bolts shall have suitable washers and, where so required, their nuts shall be hexagonal. All anchor bolts, nuts, washers, plates, and bolt sleeves shall be galvanized unless otherwise indicated or specified.

Expansion bolts shall have malleable iron and lead composition elements or the required number of units and sizes.

Bolts, anchor bolts, nuts and washers specified to be stainless steel shall be type 316 stainless steel.

Anchor bolts and expansion bolts shall be set accurately. If anchor bolts are set before the concrete has been placed, they shall be carefully held in suitable templates of approved design. If anchor or expansion bolts are set after the concrete has been placed, all necessary drilling and grouting or caulking shall be done, and care shall be taken not to damage the structure or finish by cracking, chipping, spalling, or otherwise during the drilling and caulking.

30.09 Concrete Inserts

Concrete inserts shall be designed to safely support the maximum load that can be imposed by the bolts used in the inserts. Inserts shall be of a type which will permit locking of the bolt head or nut. All inserts shall be galvanized.

3.10 Protection against Electrolysis

Where dissimilar metals are used in conjunction with each other, suitable insulation shall be provided between adjoining surfaces so as to eliminate direct contact with any resultant electrolysis. The insulation shall be bituminous impregnated felt, heavy bituminous coatings, nonmetallic separators or washers, or other approved materials.

END OF SECTION 30

SECTION 100

EXCAVATION, PIPE EMBEDMENT, FILL AND GRADING

100.01 Description

All excavations shall be made in such manner and to such widths as will provide suitable room for building the structures or laying and jointing the piping. All sheeting, bracing, supports, coffer dams, pumping and draining shall be performed to render the bottom of the excavations firm, dry and acceptable in all respects.

100.02 Sheeting and Bracing

Sheeting and bracing shall be furnished as may be necessary to support the sides of the excavation and to prevent any movement of earth which could in any way diminish the width of the excavation to less than that necessary for proper construction, or could otherwise injure or delay the work, or endanger adjacent structures.

All timber sheeting and bracing shall be left in place unless otherwise directed by the Design Engineer to remove same or cut off at a specified elevation.

All sheeting and bracing, including trench boxes not to be left in place, shall be carefully removed in such manner as not to endanger the construction or other structures. All voids left or caused by the withdrawal of sheeting shall be backfilled immediately with approved material and compacted by ramming with tools especially adapted to that purpose, by watering, or by other means as may be directed by the Design Engineer.

100.03 Drainage

100.03.01 General

To ensure proper conditions at all times during construction, all means shall be used to intercept and/or remove promptly and dispose properly of all water entering trenches and other excavations. Such excavations shall be kept dry until the structures, pipes and appurtenances to be built therein have been completed to such extent that they will not be floated or otherwise damaged.

All water pumped or drained from the work shall be disposed of in a suitable manner without undue interference with other work, damage to pavements, other surfaces, or property. Suitable temporary pipes, flumes, or channels shall be provided for water that may flow along or across the site of the work. All requirements of all regulatory agencies regarding dewatering and the discharge of water from the project shall be complied with.

All labor, materials, tools, and equipment shall be provided, as necessary, to properly control the quality of the discharge from the dewatering operations as described herein. All applicable laws, rules and regulations governing the discharge of water from dewatering operations shall be

complied with. All dewatering shall be accomplished by the use of sanded well points and other techniques deemed necessary by the Contractor to properly dewater the trench excavations.

The water discharged from the Contractor's dewatering operation shall not exceed the turbidity limits promulgated by the State of Florida Department of Environmental Protection discharge standards for the Loxahatchee River or its tributaries.

Unless otherwise directed by the Design Engineer, an approved siltation tank shall be installed ahead of dewatering discharge points. In addition, silt screens and other devices and techniques may be required to maintain the discharge quality at turbidity levels below the required limits.

Any and all methods approved by the Design Engineer to control the bacteriological quality of well point discharge into existing drainage ditches and/or canals shall be utilized. Levels for fecal coliform in a discharge which ultimately leads to the Loxahatchee River, shall not exceed those promulgated by the State of Florida Department of Environmental Protection discharge standards.

100.03.02 Drainage Well-point System

If it is necessary to drain the soil and prevent saturated soil from flowing into the excavation, an efficient drain well-point system will be utilized. The well points shall be designed especially for this service. The pumping unit shall be designed for use with the well-points and shall be capable of maintaining a high vacuum and of handling large volumes of air and water at the same time.

100.04 Trench Excavation

Where pipe is to be laid in rock bedding or concrete cradle, the trench may be excavated by machinery to, or to just below, the designated subgrade, provided that the material remaining at the bottom of the trench is not disturbed.

If the trench is excavated below the designated subgrade, the undercut shall be backfilled with compacted bedding rock, uniformly graded from ¼-inch size.

100.05 Depth of Trench

Trenches shall be excavated to such points as will permit the pipe to be laid at the elevations, slopes, or depths of cover indicated and at uniform slopes between indicated elevations.

100.06 Width of Trench

Pipe trenches shall be made as narrow as practicable and shall not be widened by scraping or loosening materials from the sides, Every effort shall be made to keep the sides of the trenches firm and undisturbed until backfilling has been completed and consolidated.

Trenches shall be excavated with approximately vertical sides between the elevation of the center of the pipe and an elevation one (1) foot above the top of the pipe.

100.07 Trench Excavation in Fill

If pipe is to be laid in embankments or other recently filled material, the material shall first be placed to the top of the fill or to go to a height of at least three (3) feet above the top of the pipe, whichever is the lesser, Particular care shall be taken to ensure maximum consolidation of material under the pipe location, The pipe trench shall be excavated as though in undisturbed material.

100.08 Unauthorized Excavation

If bottom of any excavation is taken out or disturbed beyond the limits indicated or prescribed, the resulting void shall be backfilled with embedment material compacted to a minimum of 90% of AASHO T-180 or to the standards of the applicable agency having jurisdiction.

100.09 Elimination of Unsuitable Material

Pipe bedding shall extend a minimum of 4 inches below the pipe. The pipe shall be supported on suitable material ascertained by the Design Engineer following good engineering practices.

100.10 Backfilling

As soon as practicable after the pipes have been laid, or the structures have been built and are structurally adequate to support the loads, including construction loads to which they will be subjected, the backfilling shall be started and thereafter it shall proceed until its completion.

100.10.1 Backfill Materials

The nature of the materials will govern both their acceptability for backfill and the methods best suited for their placement and compaction in the backfill. The materials and the methods shall both be subject to the approval and direction of the Design Engineer. No stone or rock fragment larger than 3 inches in greatest dimension shall be placed in the backfill nor shall large masses of backfill material be dropped into the trench in such a manner as to endanger the pipeline. If necessary, a timber grillage shall be used to break the fall of material dropped from a height of more than 5 feet. Pieces of bituminous pavement shall be excluded from the backfill unless their use is expressly permitted, in which case they shall be broken up as directed.

100.10.2 Embedment Materials

Three broad classes of material shall be used for bedding, haunching, and pipe side support.

CLASS 1 - Angular, ¼-inch to ¾-inch graded stone,
of which 100% passes a 1-inch sieve such as coral,
slag, cinders, crushed stone, crushed shells, or

bedding rock.

CLASS 2 - Coarse sands and gravels with maximum particle size 3/4 inch including variously graded sands and gravels containing small percentages of fines, generally granular and non-cohesive, either wet or dry. Soil Types GW, GP, SW. and SP are included in this class.

CLASS 3 - Fine sand and clayey gravels, including fine sands, sand-clay mixtures, and gravel-clay mixtures. Soil Types GM, GC, SM, and SC are included in this class. Included in Class 3 are existing soil types classified as select backfill.

Class 1, Class 2, or Class 3 material shall be used for bedding material to the top of the pipe. Special care must be taken to insure Class 1. 2, or 3 material is worked under the pipe haunch. Class 2 or 3 material shall be compacted to a minimum of 98% density per AASHO T -180. The District has the option, at any time, to take density tests to confirm the 98% compaction. Precautions shall be taken to prevent movement of the pipe when placing and compacting material under the pipe haunches.

If Class 2 or 3 material is used for bedding and haunching, a dry trench shall be maintained.

Under certain conditions, the Engineer may be faced with an unusual amount of water running in the trench which he may find necessary to remove in order to properly install and compact the embedment material. The Engineer may elect to remove the water with trench side pumps through the use of Class 1 material for bedding. The depth of Class 1 material will depend upon the amount of water but take care to ensure that the trench wall soil material is such that it will not be removed from the area adjacent to the bedding as a result of the running water. The Engineer may also elect to utilize well points or under drain to control excessive ground water. If Class 1 material is used as bedding and under drain, it must be utilized at least up to the top of the pipe.

100.10.3 Zone Around Pipe

The zone around the pipe shall be backfilled with the materials and to the densities and limits indicated on the details.

100.10.4 Compaction

Compaction shall be accomplished by tamping, or under appropriate construction techniques to achieve the required densities.

100.10.5 Maximum Density

Unless specified otherwise, the percent of maximum density referred to in these specifications refers to the maximum density obtained when the material is laboratory tested in accordance with the procedures outlined in Designation AASHTO T-180, Latest Revision or as otherwise required by the governmental agency having jurisdiction over the finished roadway. Field densities shall be determined by a testing laboratory using accepted methods.

100.10.6 Miscellaneous Requirements

Whatever method of compacting backfill is used, care shall be taken that stones and lumps shall not become nested and that all voids between stones shall be completely filled with fine materials. Only approved quantities of stones and rock fragments shall be used in the backfill.

All voids left by the removal of sheeting shall be completely backfilled with suitable material, thoroughly compacted.

END OF SECTION 100

SECTION 107

HORIZONTAL DIRECTIONAL DRILL

107.01 General

This specification covers installation of 4" and larger diameter HDPE pipe using horizontal directional drill methods. Installations shall comply with FDOT Standard Specification (Latest Edition) Section 555, ASTM F1962 and this specification.

107.02 Material and Equipment

The drilling fluid shall be a bentonite drilling fluid with or without polymer additives. All materials shall be NSF/ANSI 60 certified.

Pipe and fittings shall comply with Section 110.

Tracking/Steering equipment shall require a walk-over tracking system. The tracking/steering equipment shall place the pilot bore with a maximum horizontal tolerance of +/- 5% of directional bore pipe depth below grade.

After placement the contractor shall utilize a magnetic locating system utilizing a DC or AC current and a surveyed surface loop coil to as-built the final directional bore installation location in place. The surface loop shall be surveyed in by a Florida Licensed Professional Land Surveyor and georeferenced to State Plane Coordinates in NAD83, Florida East Zone and vertical datum NGVD29.

All directional drills shall be installed with a minimum 2" HDPE conduit and two minimum 10 gauge tracer wires installed for the full length of the bore. The conduit shall be terminated in a CDR box installed at each end of the bore. The 10-gauge tracer wires shall be terminated in the valve box for the isolation valves on each end. The conduit diameter and wall thickness shall be sized to withstand anticipated pull back forces of the installation. Tracer wire shall be high strength copper clad steel, Copperhead Soloshot EHS or approved equal.

107.03 Submittals

Submit technical data, cut sheets and shop drawings for equipment and materials including but not limited to drilling fluid (including MSDS Sheet), additives, pipe, fittings, adapters, pipe stiffeners, bore plan, locating and tracking equipment, locating tracking equipment calibration, locating and tracking equipment certification, heat fusion technician certification and proposed sequence of construction for approval by the Engineer.

Horizontal and vertical alignment of the pilot bore based on location information from the locating/tracking/steering equipment outlined in paragraph 107.02 and surveyed points on the DC surface looped coil. The horizontal and vertical alignment shall be referenced to horizontal and

vertical datum requirements as specified in the Record Drawing Submittal Guide, Standard Detail SD-29. **The horizontal and vertical alignment shall be as-built and certified by the steering contractor as complying with the locating/tracking/steering equipment manufacturers recommended procedures.**

A log of directional drilling machine pressures during pulling operations converted to tensile stress seen in the pipe. Hydraulic pressure produced by the machine alone is not acceptable.

Experience and project resumes.

107.04 Experience

The directional drill contractor and locating/tracking/steering/contractor shall demonstrate experience in similar horizontal directional drills. Experience shall be a minimum of 5 successful installations of same or larger diameter of same or longer length in the previous 5 years. The directional drill contractor shall submit a list of references.

107.05 Placement and Testing

Perform all locates and pothole all potential conflicts prior to submitting the bore plan. The bore plan shall not be approved until all known conflicts have been resolved.

HDPE pipe shall be handled with care to include only the use of nylon slings for lifting and the use of appropriate sized pipeline rollers for supporting and maneuvering the pipe during fusion and pull back operations.

All HDPE pipe shall be pressure tested per Section 140.

All pipe installed below the water table shall be flooded with water prior to pulling operations.

Installations shall not exceed the pipe manufacturer's recommended radius of curvature.

The reamed hole shall not exceed 1.5 times the nominal diameter of the installed pipe.

All directional bores shall include one isolation valve on each end.

Upon completion bore pits shall be cleaned of excess drilling fluid and backfilled with clean fill.

END OF SECTION 107

SECTION 110

PIPE, FITTINGS AND ACCESSORIES

110.01 General

This section provides standards for all pipe and fittings used in the construction of District wastewater facilities. Approved piping systems include SCH40 and SCH 80 PVC, High Density Polyethylene (HDPE), SDR26 PVC, C900 PVC, C905 PVC and Ductile Iron.

110.02 Schedule 40 and 80 PVC Pipe (1/2" – 3")

Small diameter PVC (3" diameter or less) pipe and fittings shall be pressure rated ASTM D1784/D1785 schedule 40 for buried applications and schedule 80 for non-buried applications. Small diameter PVC pipe shall be marked with schedule, diameter, pressure rating at 140 F and applicable ASTM standards for dimensions and materials and be white or gray in color.

Small diameter PVC joints shall be solvent weld socket type.

110.03 AWWA C901 High Density Polyethylene (1/2" – 3")

Small diameter HDPE (3" diameter or less) pipe shall manufactured from PE4710 resin and comply with AWWA C901 and ASTM ~~F714~~D3035. Small diameter HDPE pipe shall be iron pipe size (IPS) with a standard dimension ratio (SDR) 11. Small diameter HDPE pipe shall be marked with diameter, SDR, AWWA C901, ASTM ~~F714~~ D3035 and PE4710 and shall be black in color with extruded stripes in applicable color; sewer = green, IQ = purple.

Small diameter HDPE pipe shall come in reels sufficient for continuous lay lengths from service latera to service lateral.

Small diameter HDPE pipe shall use brass pack joint style couplings and stainless steel pipe stiffeners.

110.04 AWWA C906 High Density Polyethylene (4" – 63")

Large diameter HDPE (4" – 63") pipe shall manufactured from PE4710 resin and comply with AWWA C906, ASTM F714 and be listed with the Plastic Pipe Institute's (PPI) TR4. Large diameter pipe shall be ductile iron pipe size (DIPS) with a standard dimension ratio (SDR) 11. Large diameter HDPE pipe shall be marked with diameter, SDR, AWWA C906, ASTM F714 and PE4710 and be black in color with extruded stripes in applicable color; sewer = green, IQ = purple, potable = blue.

Single joints of pipe shall be a minimum of 40 feet in length. Damaged pipe may have the damaged area cut out and the remaining portion reused as long as the remaining portion is a minimum of 20 feet in length.

Large diameter HDPE pipe shall utilize HDPE butt fused fittings of the same SDR.

110.05 SDR 26 PVC Gravity Mains

Gravity main installations whose invert is greater than 4'-0" and less than 14'-0" shall be integral bell and spigot gasketed pipe and comply with ASTM D3034 for SDR 26 up to 15" in diameter. SDR 26 gravity main pipe shall meet the following ASTM Standards: D3212 (Joint), F477 (Gasket), D1784 (PVC Compound), D2412 (Stiffness) and D2321 (installation). SDR 26 gravity main pipe shall be green in color and marked with diameter, SDR and applicable ASTM standards.

Joints of SDR 26 gravity main pipe shall be either 14'-0" or 20'-0" in length

110.06 AWWA C900 Force Mains

Force main installations 4" – 48" shall be integral bell and spigot gasketed pipe and comply with AWWA C900 DR18, Pressure Class 235. C900 Force main pipe shall comply with ASTM Standards D1784 (PVC Compound), D3139 (Joint), and F477 (Gasket). C900 force main pipe shall be marked with diameter, DR and AWWA C900. C900 force main pipe shall be green for sewer and purple for IQ.

Joints of C900 force main pipe shall be either 14'-0" or 20'-0" in length.

C900 force main pipe shall use ductile iron fittings with restrained mechanical joints

110.07 Ductile Iron Pipe

All ductile iron pipe shall be manufactured in accordance with ANSI/AWWA C151/A21.51. Ductile iron pipe shall be pressure class 350 up to 20" and pressure class 250 for larger diameters. Ductile iron pipe shall be epoxy coated on the interior with Protecto 401, Permite 9043 Type II or Linerguard. Coatings shall conform to ANSI/AWWA C104/A21.4

Joints shall be conform to ANSI/AWWA C111/A21.11. Restrained push on joints shall use Field Lok 350 Gaskets by US Pipe and Foundry Co., or approved equal.

Ductile Iron Pipe shall be minimum Pressure Class 350 up to 20-inches in diameter and Pressure Class 250 for larger diameters.

Where ductile iron pipe is used, fittings shall be ductile iron and conform to the requirements of ANSI/AWWA C153/A21.53 and shall be of a pressure classification at least equal to that of the pipe with which they are used. Fittings may be flanged or mechanical as applicable.

110.08 SDR 26 PVC Fittings

PVC Gravity main fittings shall conform to the requirements of ASTM D2241 SDR26. Gaskets shall confirm to ASTM F477. Fittings in sizes not available in injection molded form shall be fabricated from SDR26 pipe in accordance with ASTM D2241.

110.09 Schedule 40 and 80 PVC Fittings

Fittings used in small diameter PVC piping systems shall match the schedule of the piping system, either Schedule 40 or 80. Fittings shall be socket weld and conform to ASTM D1785 for physical dimensions and ASTM D1784 for materials.

110.010 HDPE Butt Fused Fittings

Molded butt fusion fittings and adapters shall conform to ASTM D 3261, utilize HDPE conforming to the pipe to which it will be fused and have the same dimension ratio as the pipe to which it will be fused. All fittings shall be pressure rated to provide a working pressure rating no less than that of the pipe.

110.011 Large Diameter HDPE to PVC/DI Adapters

Transition from HDPE to other piping systems shall require MJ or flanged HDPE adapters. Instances where these adapters are not practical will require pipe stiffeners in conjunction with ductile iron fittings. The pipe stiffeners shall be stainless steel as manufactured by JCM Industries or pre-approved equal. Pipe stiffeners in conjunction with ductile iron fittings shall only be used with the written approval of the District Engineer for HDPE pipe 12" diameter and smaller. When approved, MEGALUG Series 2000PV mechanical joint restraints or approved equal shall be used.

110.012 Small Diameter HDPE Fittings and Adapters

Small diameter HDPE pipe (1/2" – 3") HDPE to HDPE and HDPE to PVC connections shall use pack joint style fittings as manufactured by Ford Meter Box Co. Stainless steel pipe stiffeners shall also be required.

110.013 Ductile Iron Fittings

Ductile iron fittings shall conform to ANSI/AWWA C153/A21.53 (compact fittings) with a minimum pressure rating of 350 psi. Fittings shall be mechanical joint or flanged as required.

Flanged fittings shall comply with ANSI B16.5, Class 150.

All mechanical joints shall be restrained. Restrained mechanical joints shall use 1100 Series Megalug by EBAA Iron Sales, Inc. or approved equal.

Ductile iron fittings shall be epoxy coated on the interior with Protecto 401, Permite 9043 Type II or Linerguard. Coatings shall conform to ANSI/AWWA C104/A21.4

110.014 Ductile Iron Pipe and Fittings Linings and Coatings

Ductile iron pipe fittings shall be epoxy coated on the interior with Protecto 401, Permite 9043 Type II or Linerguard. Coatings shall conform to ANSI/AWWA C104/A21.4

Buried ductile iron pipe and fittings shall receive an external bituminous coating in accordance with ANSI 21.10. and be striped with green for sewer and purple for IQ water.

Above grade ductile iron pipe and fittings shall receive a three coat system; Prime Coat: TNEMEC-Aluminum Mastic #135 (3 to 5 mils DFT), Intermediate Coat Series 66 Epoxoline Hi-Build Epoxy (4 to 6 mils DFT) and Finish Coat Series 73 Endura-Shield III Urethane (2 to 3 mils DFT). Coatings shall be green for sewer and purple for reclaimed water.

110.015 Marking Tape

All buried piping shall include marking tape. Marking tape shall be minimum 2" wide, magnetic and detectable. Marking tape shall be green and marked "SEWER".

110.016 Buried Markers

Buried markers shall be installed at all fittings, valves, service connections, change of direction and every 300' of pipe lay length. Buried markers are not required on gravity main piping but are required on service lateral piping and cleanouts. Buried markers shall be EMS Mini-Markers for Wastewater Model 1258 as by 3M.

110.017 Tracer Wire

When specifically required pressure rated piping shall be installed with tracer wire. Tracer wire shall be attached to the pipe using a half-hitch every 10' for direct bury applications and shall be pulled with the pipe (without attaching) in directional drill installations. Tracer wire in directional drill applications shall be minimum 10 gauge, Copperhead Soloshot EHS or approved equal. Tracer wire in direct bury applications shall be minimum 14 gauge, PVC coated, solid copper wire.

110.018 Handling and Cutting Pipe

The pipe manufacturer's recommendation for handling, storing, unloading and cutting pipe shall be followed. Individual pipes shall not be allowed to drop from the truck when unloading. Pipe units shall not be handled with chains or single cables. Pipe shall not be stored more than two units high. Every care shall be taken in handling and laying pipe and fittings to avoid damaging the pipe or scratching or marring machined or finished surfaces.

Any fitting showing a crack shall be marked as rejected and removed at once from the work.

In any pipe showing a distinct crack and in which it is believed there is not incipient fracture beyond the limits of the visible crack, the cracked portions, if so approved by the Design Engineer, may be cut off before the pipe is laid so that the pipe used is perfectly sound. The cut shall be made in the sound barrel at a point at least 12-inches from the visible limits of the crack.

Except as otherwise approved, all cutting shall be done with knives or saws adapted to the purpose. All cut ends shall be examined for possible cracks caused by cutting.

Cut ends to be used with push on joints shall be carefully chamfered and the reference mark located in accordance with the manufacturer's recommendation to prevent cutting the gasket when the pipe is laid or installed.

110.019 Installing Pipe and Fittings

No defective pipe or fittings shall be laid or placed in the piping, and any piece discovered to be defective after having been laid or placed shall be removed and replaced by a sound and satisfactory piece.

Each pipe and fitting shall be cleared of all debris, dirt, etc., before being laid and shall be kept clean until accepted in the complete work. Pipe and fittings shall be laid accurately to the lines and grades indicated on the drawings or required. Care shall be taken to ensure a good alignment both horizontally and vertically.

Each length of pipe shall have a firm bearing along its entire length. Embedment requirements are shown on the Standard Details and in this specification.

The bell of the pipe shall be cleaned of dirt or other obstruction and wiped out before the cleaned and prepared spigot of the next pipe is inserted into it. Only lubricants made by the pipe manufacturer may be used on the spigot. The new pipe shall be shoved firmly into place until properly seated and held securely until the joint has been completed.

110.020 Temporary Plugs

At all times when pipe laying is not actually in progress, the open ends of pipe shall be closed by temporary watertight plugs. If water is in the trench when work is resumed, the plug shall not be removed until all danger of water entering the pipe has passed.

110.021 Preparation of Trench Bottom

The trench bottom shall be constructed to provide a firm, stable and uniform support for the full length of the pipe. Unsuitable foundation material shall be removed as required by the Engineer and refilled with Class 1, 2, or 3 material. Class 2 or 3 material shall be compacted to a minimum of 90% standard proctor density.

110.022 Manhole Connections

Where PVC gravity or force main pipe enters the manhole, approved sealing adapters as manufactured by Harco, Fernco or equal, shall be used. Any coupling used shall be coated with an epoxy coated sand finish approved by the District.

110.023 Bell Holes for Elastomeric Seal Joints

When the pipe being installed is provided with elastomeric seal joints, bell holes shall be excavated in the bedding material to allow for unobstructed assembly of the joint. Care should be taken that the bell hole is not larger than necessary to accomplish proper joint assembly. When the joint has been made, the bell hole should be carefully filled with bedding or haunching material to provide for adequate support of the pipe throughout the entire length.

END OF SECTION 110

SECTION 120

CAST IN PLACE CONCRETE

120.01 Materials

120.01.1 Concrete

Ready-mixed concrete shall be used. It shall comply with the Standard Specifications for Ready-Mixed Concrete, ASTM Designation C94 for the strengths specified herein. Alternate No.2, under Paragraph 4 - Quality of Concrete ASTM C94 shall govern for the design of the concrete mixture.

120.01.2 Cement

Type I cement shall be used in concrete for general purposes. Type II cement shall be used for sewer manholes, wet wells, and all other applications where the concrete may be exposed to a wastewater atmosphere.

120.02 Concrete

120.02.1 Mix

Concrete shall be composed of Portland cement, coarse aggregate, fine aggregate and water. The concrete mix shall be designed to produce the quality specified, proportioned and mixed in accordance with the requirements set forth herein and shall in all cases meet the following requirements:

Class	Location	28 Day Compressive Strength
A.	Specifically Required on Plans	4,000 psi
B.	General Structural Concrete	3,000 psi
C.	Non-structural Applications	2,500 psi

120.02.2 Slump

The concrete, when placed, shall show slumps within the following limits when tested in accordance with the Method of Test for Slump of Portland Cement Concrete, ASTM Standard Specification C-143.

Type of Concrete	Min. Slump	Max. Slump
Mass Concrete	1 Inch	3 Inches
Reinforced Concrete:		
Thin vertical sections and thin columns, 7 inches or less in thickness	3 Inches	6 Inches
Heavy vertical sections more than 7 inches in thickness	3 Inches	5 Inches
Structural Slabs	1 Inch	4 Inches

120.02.3 Air Entraining

Air entrained concrete shall conform with the following requirements:

	Maximum Aggregate Size(Inches):				
	3/8:	1-2:	3/4:	1:	1-1/2:
Average total air content, percent (Plus or minus 1%):	5	5	4	4	3

120.03 Placing Concrete

Concrete shall be placed within 1 hour of the load ticket time stamp and before the initial set has occurred.

The concrete shall be compacted and worked in an approved manner into all corners and angles of the forms and around reinforcement and embedded fixtures in such a manner to prevent segregation of the coarse aggregate.

All concrete shall be placed with an aid of mechanical vibrating equipment supplemented by hand forking or spading. Vibration shall be transmitted directly to the concrete and not through the forms. The duration of vibration at any location in the forms shall be held to a minimum necessary to produce thorough compaction. The concrete shall be placed by suitable equipment as nearly as possible to its final location and without any segregation of the aggregate. Any free vertical drop shall not exceed 4-*1/2* feet.

Expansion joints shall be placed as indicated on the plans. Joint material shall be installed as indicated and as approved by the Design Engineer. Construction joints shall be made only at locations indicated on the plans or approved by the Design Engineer, and in such manner as not to impair the strength, water-tightness or appearance of the structure.

120.04 Finishing

All top surfaces which are not covered by forms and which are not to be covered by additional concrete or backfill, shall be carried slightly above grade and struck off by board finish. All edges shall be provided with a *3/4* inch chamfer. All exposed surfaces which show board marks, joint marks or other irregularities after the forms are removed shall, at the discretion of the Design Engineer, be rubbed with carborundum brick, filled or otherwise dressed to produce a smooth true surface.

No special concrete or cement mortar topping course shall be used for slab finish unless shown on the drawings. The slab shall be brought to a true and even finish by power or hand floating. Unless otherwise specified, the surface shall be steel troweled to a smooth finish. Troweling shall be the minimum to obtain a smooth, dense surface and shall not be done until the mortar has hardened sufficiently to prevent excess fine material from being worked to the surface.

120.05 Curing

All concrete shall be kept wet by covering with water and approved water saturated covering, or other approved method which will keep all surfaces continuously wet for a period of seven (7) days, unless otherwise specified by the Design Engineer. All concrete shall be adequately protected from injurious action by the sun. Fresh concrete shall be protected from heavy rains, flowing water and mechanical injury. All concrete shall be kept damp for at least seven (7) days by covering with an approved saturated covering, by a system of perforated pipes of mechanical sprinklers, or by any other approved method which will keep all surfaces continuously damp.

Where wood forms are left in place during curing, they shall be kept wet at all times to prevent opening at the joints and drying out of the concrete. Water for curing shall be clean and entirely free from any elements which might cause staining or discoloration of the concrete.

120.06 Forms

Forms shall be of wood, metal, or other approved material shall be built true to line and grade, mortar tight, adequately braced and supported, and sufficiently rigid to prevent displacement or sagging.

Forms, except those lined with absorptive form lining, shall be coated with a non-staining mineral oil applied shortly before placing the concrete. In lieu of oiling, forms for unexposed surfaces may be thoroughly wetted immediately before placing the concrete.

Forms ties shall be of a design such that when forms are removed no metal shall be within 1 inch of the finished surface. Holes remaining from withdrawn tie rods or bolts shall be filled solid with cement mortar.

Under normal conditions, the minimum waiting period after placing concrete for stripping forms shall be as follows:

Where Used	Time
1. Bottom forms of girders and beams, floor slabs, and other concrete.	5 Days
2. Walls, piers, columns, sides of beams, and other vertical surfaces.	24-48 hours

The use of this schedule shall not operate to relieve the Contractor or the Design Engineer of responsibility for the safety of the structure.

120.07 Embedded Items

In addition to steel reinforcement, pipes, and other metal objects, as shown on the plans or ordered to be built into, or set in, or attached to the concrete, all necessary precautions shall be taken to prevent these objects being displaced, broken, or deformed. Before concrete is placed, care shall be taken to determine that any embedded or wood parts are firmly and securely fastened in place as indicated. They shall be thoroughly cleaned and free of paint or other coating, rust, scale, oil, or any foreign matter. The concrete shall be packed tightly around the pipes and other metal work to prevent leakage and to secure perfect adhesion. Drains shall be adequately protected from intrusion of concrete.

Concrete placing operations shall not begin until the reinforcing steel, utilities, anchor bolts, etc., to be embedded in concrete have been inspected and approved by the Design Engineer.

120.08 Reinforcing Steel

Reinforcing bars and mesh shall be sizes and shapes as indicated on the drawings. Bars shall be deformed bars of intermediate grade, new billet steel conforming with ASTM Designation A-615, Grade 60. Wire mesh shall conform with ASTM Designation A-I85.

120.09 Water Stops

Water stops shall be molded PVC, hollow center bulb, multiple ribbed as manufactured by W.R. Meadows, Inc., Electrovert, Inc. or Serviced Products Corporation, or approved equal.

120.10 Testing Services

Testing shall be performed by an independent commercial testing laboratory approved by the District. The Design Engineer shall furnish the District with copies of compression and slump test reports for every thirty (30) cubic yards or portion thereof of concrete placed. It shall be the responsibility of the Design Engineer to produce concrete of the strength, durability, workability and finish specified, furnish representative material for specimens in quantities required by the testing laboratory, and cooperate and assist in taking samples of materials for testing. The District reserves the right to take and test additional concrete samples.

END OF SECTION 120

SECTION 121

PRECAST MANHOLES AND STRUCTURES

121.01 General

Manholes and structures shall conform in shape, size, dimensions, materials and other respects to the Standard Details or as directed by the District's Engineer.

All manholes and structures shall be precast concrete with monolithic base sections. Invert channels may be formed in the concrete of the base or may be formed of brick and mortar upon the base.

All manholes which will receive direct force main discharges, or are at least 14-feet deep (rim to lowest invert) and the last collection manhole just upstream of any lift station shall receive a minimum 0.5-inch thick calcium aluminate corrosion barrier such as Sewper Coat, Strong Seal, Refratta HAC 100 or approved equal, and installed per the manufacturers recommendations.

The inverts shall conform accurately to the size of the adjoining pipes. Sides inverts shall be curved and main inverts (where direction changes) shall be laid out in smooth curves of the longest possible radius which is tangent to the centerlines of adjoining sewers.

Connections to existing structures shall be made only by mechanically coring a hole through the structure. Jackhammer and other methods of cutting a hole through an existing structure are not acceptable.

Rubber "boots" subject to District approval, will be allowed for making pipe connections to structures provided that a layer of non-shrink grout be applied to seal the annular space on the inside of the manhole for the full wall thickness. The boots shall be cast in the precast structure and shall utilize stainless steel bands and screws.

121.02 Precast Concrete Sections

Precast concrete sectionsshall conform to the ASTM Specifications for Precast Reinforced Concrete Manhole Risers and Tops, Designation C-478 or ASTM C858 Standard Specification for Underground Precast Concrete Utility Structures with the following exceptions and additional requirements:

Type II cement shall be used in structures directly exposed to wastewater (i.e. manholes and wetwells.

Sections shall be steam cured and shall not be
shipped until at least five (5) days after having been

cast.

Acceptance of the sections will be on the basis of material tests, finished quality, and inspection of the completed product.

Cones shall be 30" - concentric type

Joint material in riser sections shall be of the bitumastic type as manufactured by RAM-NEK or equal.

No more than two (2) lift holes may be cast or drilled in each section.

121.03 Shallow Manhole

When the depth from the deepest invert to the top of the cone section is 4'-0" or less, an approved shallow cone section with a 30" opening shall be used. In no case shall a flat slab top section be used.

121.04 Setting Precast Sections

Precast reinforced concrete sections shall be set so as to be vertical with sections in true alignment.

All holes in sections, used for their handling, shall be thoroughly plugged with mortar. The mortar shall be one part cement and 1-1/2 parts sand; mixed slightly damp to the touch (just short of "balling"); hammered into the holes until it is dense and an excess of paste appears on the surface; and then finished smooth and flush with the adjoining surfaces.

Anti-hydro grout shall be used to fill all voids around sanitary sewer pipe and manhole sections.

121.05 Mortar for Brick and Concrete Block Work

The mortar shall be composed of Portland cement, hydrated lime, and sand, in which the volume of sand shall not exceed three (3) times the sum of the volumes of cement and lime. The proportions of cement and lime shall be as directed and may vary from 1:1/4 for dense, hard burned brick to 1:3/4 for softer brick. In general, mortar for Grade SA brick shall be mixed in the proportions of 1:1/2:4-1/2.

Cement shall be Type II Portland cement as specified for under Concrete Masonry.

Hydrated lime shall be Type "S" conforming to the ASTM Standard Specification for Hydrated Lime for Masonry Purposes, Designation C207 - Latest Revision.

The sand shall be well graded clean, durable particles all of which shall pass a No. 8 sieve.

121.06 Laying Brick

Only clean, red, fire cured brick shall be used. The brick or block shall be moistened by suitable means, as directed, until they are neither so dry as to absorb water from the mortar, nor so wet as to be slippery when laid.

Each brick or block shall be laid in a full bed and joint of mortar without repairing subsequent grouting, flushing, or filling, and shall be thoroughly bonded as directed.

Brick shall only be used in chimney construction for final adjustment of frame and covers to required grade. Brick chimneys shall not exceed 18 inches in height for manholes 4-6 feet deep and 24 inches for manholes greater than 6 feet deep.

121.07 Plastering and Curing Brick

Outside faces of brick shall be plastered with mortar from 1/4 inch to 3/8 inch thick. If required, the brick shall be properly moistened prior to application of the mortar. The plaster shall be carefully spread and troweled so that all cracks are thoroughly worked out. After hardening, the plaster shall be carefully checked by being tapped for bond and soundness. Unbonded or unsound plaster shall be removed and replaced.

Brick and plaster shall be protected from too rapid drying by the use of burlaps kept moist, or by other approved means and shall be protected from the weather, all as required.

121.08 Frames and Covers

The castings for the frames and covers shall be of good quality, strong, tough, even grained cast iron, smooth, free from scale, lumps, blisters, sandholes and defects of every nature which render them unfit for the service for which they are intended.

All castings shall be thoroughly cleaned and subject to a careful hammer inspection.

Casting shall be at least Class 30 conforming to the ASTM Standard Specification for Gray Iron Castings, Designation A48- Latest Revision, and conform to the standard details.

The contact surface of the frame and cover seat shall be a machine fit and the cover surface shall be "knobbed".

Frame and covers shall be US Foundry Model 230 AB-M

121.09 Setting Frames and Covers

Frames shall be set with the tops conforming accurately to the grade of the pavement or finished

roadway surface, in unsurfaced areas the frames and covers shall be set 3 inches higher than the surrounding ground. Frames shall be set concentric with the top of the masonry and in a full bed of mortar so that the space between the top of the manhole masonry and the bottom flange of the frame shall be completely filled and made watertight. A thick ring of mortar extending to the outer edge of the masonry shall be placed around the bottom flange. The mortar shall be smoothly finished to be flush with the top of the flange and have a slight slope to shed water away from the frame.

Cover shall be left in place in the frames on completion of other work at the manholes.

121.10 Adjustment of Existing Manhole Frames

When it is necessary to raise existing manhole frames due to repaving of roads or other reasons, the frames shall be shimmed with masonry, brick and Type II cement mortar to the new finished grade, or in the case of sodded areas, 2" above finished grade. In cases where raising the existing frame and cover result in chimneys greater than 12” in height the District may require the conical section be raised installation of additional barrel section below the conical section.

When new paving operations cause the manhole frame to be adjusted upwards, manholes will be raised using conventional shimming methods under the frame. The use of adapter rings in the existing frame will not be permitted unless specifically authorized by the District.

END OF SECTION 121

SECTION 122

GREASE INTERCEPTORS AND TRAPS

122.01 Grease, Oil and Sand Interceptors

122.01.1 Grease Interceptors

Grease, oil and sand can be a serious problem for any sewer system if not taken care of properly and adequately. When grease is discharged into a gravity collection system, it can cause operation and maintenance problems not only inside those gravity lines, but also with the downstream lift stations and force mains. Additionally, grease inhibits the biological processes at the wastewater treatment plant.

Frequent and adequate cleaning of interceptors is important and often over looked. Interceptors shall be provided when the resultant discharge from a business contains excessive amounts of grease, oil, lint, sand or other solids and substances that are harmful or hazardous when discharged into wastewater, or in the opinion of the District Engineer the resultant discharge from such occupancy will be detrimental to the District facilities.

Grease interceptors will be required on all food service establishments where any kind of food is prepared on site, or in the opinion of the District Engineer the resultant discharge from such occupancy will be detrimental to the District facilities. Examples of businesses that will be required to have a grease interceptor are restaurants, delis, bakeries, sandwich shops, schools, hospitals, assisted and independent living facilities, etc.

Grease interceptors will be sized according to one of the two (2) formulas listed in the 2010 Florida Building Code - Plumbing, Chapter 10 – Traps, Interceptors and Separators, Table 1003.5.1, whichever best applies for the proposed establishment. The minimum sized grease interceptor shall be 750 gallons, which will also apply to businesses where the above formulas might not directly apply.

When multiple tanks are required, they must be installed in series. This also applies to pre-existing restaurants (or other facilities) that require additional capacity to augment their existing interceptors.

Interceptors shall not be shared. Each business location is required to have its own interceptor(s) and its own separate plumbing to the interceptor(s). When the same establishment has multiple discharge points that require installation of interceptors at different locations, such as an institutional facility with a kitchen and a laundry, each use shall be provided with separate plumbing and the required interceptor(s).

All equipment and plumbing fixtures in a food service facility that may introduce fats, oil or grease into the LRD wastewater facilities must be connected through the grease

interceptor, including but not limited to:

a. Scullery sinks (two or three compartment)

b. Pots and pan sinks

c. Floor drains in kitchen, walk-in coolers and washing areas (not including public restrooms

d. Pre-wash sinks

e. Dishwashers and other washing machines

f. Automatic hood wash units

g. Indoor garbage can washes

Under the counter (flow-based) grease traps are not allowed.

122.01.2 Oil/Sand Interceptors

Oil/Sand interceptors are required for all car washes and establishments with facilities for servicing vehicles/mechanical equipment. All plumbing (other than the restroom) from the area where repairs and maintenance is being performed shall connect to an oil/sand interceptor; this includes but is not limited to floor drains and hand wash sinks. Engine oil, transmission oil, coolant, solvents, additives, brake fluid or any other fluid collected in the process of servicing vehicles/mechanical equipment shall not be discharged into the interceptor or other plumbing; the handling and disposal of these fluids shall be in compliance with the DEP and LRD rules and regulations.

Oil/Sand interceptors are also required for hydraulic and all outdoor elevators, such as in parking garages, where sump pumps and/or drains are proposed to discharge to LRD's sewer system. Oil/sand interceptors are not required for indoor elevators with an approved alarm system that meets the 2010 Florida Building Code.

Oil/Sand separators shall be sized based upon the 2010 Florida Building Code - Plumbing, Chapter 10 – Traps, Interceptors and Separators, Section 1003.4.2.2. The minimum sized oil/sand separator shall be 750 gallons.

122.02 Lint Interceptors

Lint interceptors are required for all laundromats and all establishments with a central laundry room with at least 5 washing machines or more. Interceptors shall be equipped with a wire basket or similar device that's removable for cleaning and prevents passage of solids ½" or larger in size, strings, rags, buttons or other materials detrimental to the

wastewater facilities. Lint interceptors shall be sized based on the following formula: Number of washers X 2 cycles per hour X 20 gallons per cycle flow rate X 2.0 hours retention time X 1.5 storage factor. The minimum sized lint interceptor shall be 750 gallons.

122.03 General Requirements

All interceptor construction shall be concrete and shall meet all applicable standards in Chapter 64E-6, Florida Administrative Code.

All interceptors shall be provided with two (2) access manholes: one (1) over the inlet and one (1) over the outlet. LRD approved, traffic rated lids shall be installed with manhole covers to finished grade. Manhole frame & covers and inside openings in the top slab, for tanks sized 1,250 gallons or less, shall be manufactured by US foundry with a 24-inch minimum clear opening. Manhole frame & covers and inside openings in the top slab, for tanks larger than 1250 gallons, shall be US foundry, model 230-AB-M, double ring & cover, with a 30-inch minimum clear opening.

All manhole covers shall be marked with the lettering: "GREASE", "OIL" or "LINT", as applicable.

Wastewater from toilets, urinals, showers, and other similar plumbing fixtures for human waste shall not discharge into an interceptor.

122.04 Grease Interceptor Exemptions

There are instances where a food service establishment may not require a grease interceptor. In these instances an exemption from a grease interceptor may be allowed. In order to qualify for an exemption, the following minimum criteria must be met.

- No food preparation on-site.
- The following equipment is prohibited from being on-site: oven, dishwasher, stove top cooking surfaces/griddle, fryers, ranges, or any equipment used to cook food.
    - Only pre-made food may be allowed to be heated on-site using the following equipment: toasters, microwaves or sandwich presses.
- If serving food on-site, all food is served on paper/plastic plates using disposable utensils or in the pre-packaging it was brought on-site in.
- All condiments are pre-packaged in individual servings.

If the above criteria cannot be initially met or if it is found that after an exemption is given the above criteria are no longer being met, then a District-approved grease interceptor must be installed. Failure to do so will result in a violation of the District's Sewer Use Rule outlined in Chapter 31-13, Florida Administrative Code, which may result in fines against the property.

Any exemptions provided are permanent, so long as these requirements are met.

END OF SECTION 122

SECTION 130

VALVES AND APPURTENANCES

130.01 General

All buried valves and appurtenances including exposed nuts, bolts, and retainer glands shall be given an exterior approved bitumastic or epoxy coating. All valves shall open counterclockwise. All valves shall have extension stems pinned to the operating nut with a stainless steel pin extension. Stems will not be required where the valve operation nut is less than 30" from finished grade.

Contractors must supply LRD with shop drawings clearly indicating that the criterion for each type of valve or appurtenance listed in this section is satisfied.

130.02 Plug Valves

All mechanical joint and flanged plug valves shall be of the nonlubricated eccentric type. Valves shall be rated for not less than 125 psi pressure differential acting in either direction (bi-directional). At this differential, the valve shall provide drip tight shutoff. All components shall be of corrosion resistant construction. Valve flanges shall be ANSI B16.1, class 125 pound with a full round or other acceptable type port to assure minimum turbulence and minimum pressure drop. Valve bodies shall be of ductile iron and seats shall be of nickel-alloy. Valves are to have a balance plug, coated with a resilient material solidly bonded to a cast iron or semi-steel core, as required, to assure low torque and bubble-tight shutoff. The valve plug shall touch on the seat when in the closed position.

Plug valve port areas shall be at least 100% through 24 inches in diameter. For plug valves 30” and larger, a port area of at least 75% is required.

Buried plug valves shall be installed vertically with non-rising stems and shall open by turning a two inch square operating nut counterclockwise. An arrow shall be cast into the nut skirt to indicate the open direction.

Plug valves shall be as manufactured by DeZurik Corporation, Milliken, Keystone Valve Manufacturing Company (Ballcentric Type), or approved equal.

130.03 Resilient Seat Gate Valves

Gate valves shall be resilient seated, manufactured to meet or exceed the requirements of AWWA C509 or C515, Latest Revision, and in accordance with the following specifications. Valves shall have an unobstructed waterway canal equal to or greater than the full nominal diameter of the valve.

The valves are to be non-rising stem with the stem made of cast, forged, or rolled bronze as shown in AWWA C509. Two stem seals shall be provided and shall be of the O-ring type, one above and one below the thrust collar. A 2-inch square operating nut shall be provided for operating the valve. The stem nut, also made of bronze, may be independent of the gate or cast integrally with the gate. If the stem nut is cast integrally, the threads shall be straight and true with the axis of the stem to avoid binding during the opening or closing cycle.

The valve body, bonnet, and bonnet cover shall be ductile iron. All ferrous surfaces inside the valve body shall have a fusion bonded epoxy coating applied at the valve manufacturer's facilities. The coating shall meet or exceed all requirements of AWWA C550. All bolts, nuts and washers shall be stainless steel to limit exterior corrosion and maintain fastener strength.

The sealing mechanism shall consist of a cast iron or ductile iron gate having a vulcanized Buna-N or SBR synthetic rubber coating or a Buna-N rubber seat mechanically retained on the gate. The resilient sealing mechanism shall provide zero leakage at 250-psi working pressure. All valves shall have pressure tests performed to the requirements of AWWA C509 or C515 specifications, as applicable, prior to shipment from the manufacturer. Valve shall seat and be drip-tight at the working pressure when installed with the line flow in either direction.

All valves are to be tested in strict accordance with AWWA C509. Resilient seat gate valves shall be as manufactured by Mueller, Metro-Series, American Darling or approved equal.

Valves shall be covered by a Manufacturer's 10 year limited warranty from date of purchase by end user and delivered within 30 days from receipt of purchase order. The supplier will also provide laminated maintenance manuals.

130.04 Swing Check Valves

Swing check valves for sewage, sludge, and general service shall be in accordance with AWWA C 508, unless otherwise specified below, full-opening; designed for a working pressure of 150 psi unless otherwise shown, and shall have a flanged cover piece to provide access to the disc. Corrosive ferrous surface of valves, 4-inch and larger, which will be in contact with water, shall receive a fusion-bonded epoxy coating conforming to AWWA C550. The valve body and cover shall be of cast iron to ASTM A126, with flanged ends to ANSI B16.1, or mechanical joint ends, as shown.

The valve disc shall be of cast iron, ductile iron, or bronze to ASTM B 62. The valve seat and rings shall be of bronze to ASTM B 92 or B 148, or stainless steel. The hinge pin shall be of bronze or stainless steel.

Suppliers or Equal:

American-Darling Valve Co.

APCO (Valve and Primer Corp.)

Crane Company

Mueller Co.

The valves shall have a lever and counterweight and shall be suitable for horizontal or vertical mounting.

130.05 Air Release, Air Vacuum Valves, and Combination Type Valves

The air release and air vacuum valves shall be of the type especially designed for forced sewer systems. The valve shall be of the short body type and capable of releasing air, gas, or vapor under pressure during system operation or allow air to enter the system when the system is draining, as applicable. The valve shall be as shown on the Standard Details with a two inch inlet. The venting orifice shall be sized by the Design Engineer based on a working pressure of 75 psi.

It shall be the responsibility of the design engineer to determine which valve is necessary for the pipeline conditions encountered.

Air release and air vacuum valves shall be ARI D-025 (See Standard Details).

130.06 Ball Valves

Ball valves shall be limited to ¾" through 2-1/2" in size and shall have cast brass, bronze or stainless steel body, bronze tee head, stem with check, full round way opening and provision for locking in a closed position.

Ball valves can be used for force main and low pressure sewer applications up to 2-1/2" in diameter. The primary use in force main applications is for ARV isolation valve use (See Standard Details).

Valves shall be designed to be fully opened with a 90-degree turn of the operating handle and shall be full port design with bi-directional sealing rated for a minimum 150 psi working pressure.

Brass ball valves in the low pressure system~~alve~~ shall be as manufactured by Ford, with NPT or pack joint ends as needed.

Where these valves are direct buried, a 2" square gate valve operating nut shall be included with a valve box.

130.07 Brass Check Valves

Brass check valves shall be Proflo PFX31 size 1-1/2" to 2".

130.08 Valve Boxes and Vaults

All buried valves shall be equipped with a valve box. Valve boxes shall be heavy duty construction for traffic loading type, cast iron, three piece, slide type, or screw type with drop covers. The valve boxes shall be adjustable to six inches up or down from the nominal required cover of the pipe.

A number six base section shall be provided. Minimum shaft diameter shall be *5-1/4* inches and minimum metal thickness shall be *3/16* inch. Boxes shall be coated with an approved bitumastic or epoxy coating. Valve box covers shall have the word "SEWER" or "REUSE" cast thereon depending on the application. Swing check valves shall be installed in an approved suitable vault for easy access by the District maintenance staff.

Valve boxes shall be installed on firmly compacted material at a level approximately equal to the elevation of the valve packing plate. No contact between the valve and the box shall be permitted. On plug valves, the positioner on the operating mechanism shall be kept free of rocks, debris, etc.

Where valves are installed with over six feet of cover, or where the ground water table is within three feet of the ground level, an extension stem shall be provided to bring an operating nut within two feet of the finished grade. This extension, stem shall be satisfactorily pinned to the valve operation nut to prevent dislodging during operation of the valve.

END OF SECTION 130

SECTION 140

PIPELINE INTEGRITY TESTS

140.01 General

The District shall inspect all sewer facilities prior to acceptance and again just prior to the expiration of the 1-year guarantee.

When a section of pipe of a length deemed adequate by the Design Engineer is ready for testing, the pipe shall be flushed and then tested in accordance with the applicable testing method as described herein. Suitable temporary testing plugs or caps shall be installed. All necessary pressure pumps, pipe connections, meters, gauges, water, weirs, bulkheads, and other necessary equipment and all labor required for carrying out these tests shall be furnished. The Design Engineer shall notify the District at least 48 hours prior to any testing so that it may, at its option, have a representative present during the testing.

Gravity sewers shall be tested in accordance with the Hydraulic Infiltration/Exfiltration Test as described herein. Additionally, PVC Gravity sewers shall be tested for deflection as described herein. Force mains shall be tested in accordance with the Pressure and Leakage Test for Force Mains as described herein.

If the District Engineer so desires, the first section of any line between two manholes shall be tested as soon as possible after backfilling has been completed. If such tests appear to be satisfactory and acceptable, progressive testing of completed sections of the lines may be deferred at the option of the District's Engineer, and at the request of the Contractor, until all pipe has been laid and before final acceptance. However, if permitted, this will not constitute a waiver of any of the tests or the leakage requirements.

Sections of pipe tested for infiltration and exfiltration prior to completion of the project shall be subject to a final inspection at completion of the project, and also subject to additional leakage tests, if warranted in the opinion of the District Engineer.

If the section fails to pass the applicable tests, the Contractor shall locate, uncover and repair or replace the defective pipe, fitting or joint, at his own expense. Additional testing will be required after the deficiency is corrected.

140.02 Hydraulic Infiltration/Exfiltration Tests

Upon completion of a section of the sewer, the pipe shall be dewatered and tested to measure the infiltration for at least three (3) consecutive days. Test section shall be from manhole to manhole. Longer test sections may be used with the approval of the District Engineer.

For making the infiltration tests, underdrains, if used, shall be plugged, well points and other groundwater drainage shall be stopped to permit the groundwater to return to its normal level. Infiltration shall be measured by the use of weirs designed specifically for this purpose or other acceptable means approved by the District Engineer.

As required, suitable bulkheads shall be installed to permit the test of the sewer.

Where the crown of the pipe is below the natural groundwater table at the time and place of testing, the pipe shall be tested for infiltration. Suitable watertight plugs shall be installed and section of pipe to be tested shall be pumped dry before start of test. Where the crown of the pipe is above the natural water table, the pipe shall be tested for exfiltration by installing necessary plugs and filling pipes and manholes with water and maintaining a static head of water of a minimum of two feet above the crown of the pipe during the test. Exfiltration tests shall be conducted on main lines and lateral lines, unless waived by the District Engineer. The water level of internal pressure to be used for exfiltration test shall be determined by the Design Engineer.

The sewers shall pass the applicable test before any connections are made to buildings or to active sewers.

The maximum allowed infiltration/exfiltration shall not exceed 25 gallons per inch of diameter per mile per 24 hours for pipe lines and 4 gallons per 24 hours for manholes. Once systems are stabilized a 2 hour test shall be performed and the appropriate fraction of maximum allowed infiltration/exfiltration applied.

140.03 Pressure and Leakage Test for Force Mains (HDPE)

After fusing, prior to placement, the HDPE piping shall be filled with potable water and pressure tested at 100 psi or 1.5 times design operating pressure for 2 hours, whichever is greater. Each joint shall be visibly inspected for leakage at the end of 2 hours. Any sections showing visible leakage shall be cut out and the remaining pipe fused together and retested. After placement the HDPE pipe shall be pressurized to a minimum 1.65 times pipeline design pressure for 4 hours, with make up water added as necessary to maintain 1.65 times pipeline design pressure. At the end of 4 hours, pressure is reduced to 1.5 times design pressure and pressure monitored for 1 hour. Deviation in pressure > 5% during the 1 hour test indicate a failed test. All testing shall be in compliance with ASTM F2164.

140.04 Pressure and Leakage Test for Force Mains (PVC and DI)

Except as otherwise directed by the District, all pipelines shall be given combined pressure and leakage tests in sections of length approved by the District's Engineer. The Contractor shall furnish and install suitable temporary plugs or caps; all necessary pressure pumps, pipe connections, meters, gauges, and other necessary equipment; and all labor required. The Design Engineer shall witness all tests.

Subject to approval of the Design Engineer and provided that the tests are made within a reasonable time considering the progress of the project as a whole, and the need to put the section into service, the Contractor may make the tests when he desires.

The section of pipe to be tested shall be filled with water of approved quality and all air shall be expelled from the pipe.

The section under test shall be maintained full of water for a period of 24 hours prior to the combined pressure and leakage test being applied.

Two pressure and leakage tests shall be conducted for each pipeline segment. The first test shall be conducted at the average working pressure of the pipeline segment. The second test shall be conducted at a test pressure of 100 pounds per square inch or 1.5 times the pipeline design operating pressure, whichever is greater.

The pressure and leakage test shall consist of first raising the water pressure (based on the elevation of the lowest point of the section under test and corrected to the gauge location) to the specified pressure. If the Contractor cannot achieve the specified pressure and maintain it for a period of one hour with no loss of pressure and no additional pumping, the section shall be considered as having failed to pass the pressure test. The District may require that the pressure and leakage test be run in accordance with AWWA C-600 Standards, latest revision (Four Hour Test).

Allowable leakage shall not exceed the following where L = allowable leakage (gallons), N = number of joints, D = nominal diameter of pipe (inches), P = average test pressure (psi).

$$L = \frac{ND\sqrt{P}}{7400}$$

140.05 Pressure and Leakage Test for Low Pressure Force Mains

Low pressure force mains shall be filled with potable water, bled of air and pressurized to 70 psi. Pressure shall be maintained constant for 1 hour without adding water. Any loss of pressure indicates a failed test.

140.06 Deflection Testing

Pipe deflection shall not exceed 5% measured by a go/no-go gauge or mandrel. The District may confirm the pipe deflection at the end of the job prior to acceptance. Additionally, the District may confirm the pipe deflection just prior to end of the one year guarantee period. Pipe sections exceeding 5% long term deflection will be relaid by the Contractor or the Developer at his own cost and expense and retested until the District's *go/no-go* gauge passes through the pipe section.

The District's mandrel will be considered the "official" gauge used for deflection testing. The standard District gauge is manufactured by "HURCO" Technologies, Inc., Harrisburg, S.D. The outside diameter of the District's mandrel is as follows:

Pipe Diameter (Inches)	Mandrel Diameter (Inches)
8	7.28
10	9.08
12	10.79

END OF SECTION 140

SECTION 150

SUBMERSIBLE LIFT STATIONS

150.01 Scope

It is the intent of this standard is to provide component requirements and general design guidelines for submersible wastewater lift stations. This standard shall be used in conjunction with Standard Details SD-31 through 35 and referenced standards for complete submersible wastewater lift station requirements.

This specification typically defines requirements for 20HP and smaller lift stations. Lift stations greater than 20 HP, serving critical infrastructure or performing as a repump station may require alternate design criteria including variable speed, tri-plex configuration, permanent standby emergency power and PLC control. These additional design criteria will be defined by Engineering Services during the design.

150.02 Site

Lift station sites shall be provided with a minimum 40' x 40 lift station easement. Variations on the easement shall be considered on a case by case basis where access, maintenance and bypass operations can be accommodated with alternate configurations acceptable to the District and approved by Engineering Services.

The lift station site and access shall be set at proper elevations and configurations such that access and maintenance to the station will not be impaired by flooding, excessive road grades, swales, walls or landscaping. A lift station site plan indicating all topographical features, rights-of-way, easements and adjoining contiguous areas shall be submitted to the District for approval.

All above or at grade facilities shall be above the 1% Annual Chance Flood (100-year flood) zone, as shown on Flood Insurance Rate Maps (FIRMs). Site and lift station plans shall include the 100-year flood elevation.

150.03 Power

The Contractor shall coordinate with and pay all fees, deposits, and service costs to Florida Power and Light Corp. to provide a three phase, 480V or 240V underground power service to the new lift station site. The transformer for the station shall be located not further than 25 feet from the nearest station easement line.

The power meter for the lift station shall be located on the lift station site, installed on the District's standard control panel rack.

150.04 Lift Station Standard Equipment

A list of standard lift station equipment is given below. This list is not all inclusive and the Contractor shall supply all other equipment necessary for complete working installations. The lift station shall include:

Two (2) explosion proof submersible type sewage pumps with 316 stainless steel guide rails, base plates and all accessories.

Two (2) discharge lines with swing check valves and plug valves and emergency tap connection

Instrumentation/control system, (requirements vary on station size)..

One (1) electrical control panel, NEMA 4X, to house electrical equipment, pump controls, alarms and protection.

One (1) wet well.

One (1) valve vault.

Concrete covers with aluminum access hatches and safety grates

Influent drop assemblies

Permanent standby generator and ATS, (requirements vary on station size).

Radio or Cellular Telemetry System

Coatings

Concrete pads

Landscaping/site screening

The wet well structure shall receive a minimum 1.0-inch thick calcium aluminate corrosion barrier such as Sewper Coat, Strong Seal, Refratta HAC 100 or approved equal, and installed per the manufacturers recommendations.

One (1) influent (collection) manhole structure with piping connecting to the wet well structure. The distance between the collection manhole and the wet well shall be no more than 50 feet.

150.05 Pumps and Motors

The pumps shall be capable of handling grit and raw unscreened sewage. The design shall be such that the pump unit will be automatically and firmly connected to the discharge piping when lowered into place on its mating discharge connection, permanently installed in the wet well. The pump shall be easily removable for inspection or service requiring no bolts, nuts, or other fastenings to be disconnected.

All major parts, such as the stator casing, oil casing, sliding bracket, volute, and impeller shall be of gray iron. All surfaces coming into contact with sewage shall be protected by a coating resistant to sewage. All exposed bolts and nuts shall be of stainless steel.

Pump faces shall be machined to accept a sacrificial plate between the pump face and seat. The sacrificial plate shall be manufactured from ¼" brass plate, bolted to the pump face and removable/replaceable.

A wear ring system shall be installed to provide efficient sealing between the volute and impeller.

The impeller shall be hard alloy gray cast iron of non-clogging design capable of handling solids, fibrous material, heavy sludge, and other matter found in normal sewage applications. The impeller shall be constructed with a long throughout without acute turns. The impeller shall be dynamically balanced. The impeller shall be a slip fit to the shaft and key driven. Non-corroding fasteners shall be used.

Each pump shall be provided with a mechanical rotating shaft seal system running in an oil reservoir having separate, constantly hydro-dynamically lubricated and lapped seal faces.

The lower seal unit between the pump and oil chamber shall contain one stationary and one positively driven rotating tungsten-carbide ring.

The upper seal unit between the oil pump and motor housing shall contain one stationary tungsten-carbide ring and one positively driven rotating carbon ring. Each interface shall be held in contact by its own spring system supplemented by external liquid pressures. The seals shall be easily inspected and replaceable.

The shaft sealing system shall be capable of operating submerged to depths of, or pressure equivalent to, 65 feet. No seal damage shall result from operating the pumping unit out of its liquid environment. The seal system shall not rely upon the pumped media for lubrication.

A sliding guide bracket shall be an integral part of the pump unit. The volute casing shall have a machined discharge flange to automatically and firmly connect with the cast iron discharge connection, which when bolted to the floor of the sump and discharge line, will receive the pump discharge connection flange without the need of adjustment, fasteners, clamps or similar devices.

Installation of the pump unit to the discharge connection shall be the result of a simple linear downward motion of the pump unit guided by no less than two guide bars. No other motion of the pump unit, such as tilting or rotating, shall be acceptable. Sealing of the discharge interface by means of a diaphragm, O-ring, or other device will not be considered acceptable or equal to a metal to metal contact of the pump discharge flange and mating discharge connection specified and required. No portion of the pump unit shall bear directly on the floor of the wet well. There shall be no more than a 90-degree bend allowed between the volute discharge flanges and station piping.

The pump motor shall be housed in an air or oil filled watertight casing and shall have moisture resistant Class "F" 155-degree C insulation. Oil filled casing shall be filled with transformer oil, quality BP Energol JSO, or Shell Diala D or DX. The motor shall be a minimum of 5 BHP, rated for operation at 1700 or l750 rpm, on a 230V, 3-phase, 60 hertz power supply. The cable entry water seal design shall be such that precludes specific torque requirements to insure a watertight and submersible seal. Epoxies, silicones or other secondary sealing systems shall not be required or used. The cable entry junction box and motor shall be separated by a stator lead sealing gland or terminal board which shall isolate the motor interior from foreign materials gaining access through the pump top.

Pump motor cable installed shall be suitable for submersible pump applications and this shall be indicated by a code or legend permanently marked on the cable. Cable sizing shall conform to NEC specifications for pump motors and shall be of adequate size for the motor rating. Pump motor cable shall be ample length to reach the rack mounted panel. Cable length to be determined by the site plans.

The pump cable shall have 90 degree C rated insulated material based on 40 degree ambient and shall have anti-roping and anti-wicking design. All mating surfaces of major parts shall be machined and fitted with nitrile O-rings where watertight sealing is required. Machining and fittings shall be such that sealing is accomplished by automatic compression in two planes and 0-ring contact made on four surfaces, without the requirement of specific torque to affect this. Rectangular cross sectioned gaskets requiring specific torque limits to achieve compression shall not be considered adequate.
Tolerances of all parts shall be such that allows replacement of any parts without additional machining required to insure sealing a described above. No secondary sealing compounds, greases, or other devices shall be used.

Each unit shall be provided with an adequately designed cooling system. Thermal radiators integral to the stator housing, cast in on unit, are acceptable. Where water jackets along or in conjunction with radiators are used, separate circulation shall be provided. Cooling media channels and ports shall be no-clogging by virtue of their dimensions. Provisions for external cooling and flushing shall be provided.

Pump and motor assemblies shall meet NEC and NFPA requirements for explosion proof installations in Class 1, Division1, Group D environments.

The pumps and motors shall be manufactured by FLYGT Corporation.

150.06 Control Panel

This section is specific to single speed, duplex lift stations with float control, for variable speed, PLC controlled stations see Section 161.

The Contractor shall furnish and install a heavy duty type District Standard control panel as shown on the plans and specified here, as manufactured by Sta-Con Incorporated, QCI, or approved equal, and in accordance with the detail sheets SD-31 through 35.

The control panel shall contain all the remote electrical equipment necessary to provide for the operation of the pumps. The panel shall start and stop the pumps in the wet well.

The control panel shall start the "lead" pump when the liquid level rises to a preselected elevation "D". If the influent rate exceeds the capacity of the "lead" pump, the lag pump shall be started when the liquid level rises to a preselected elevation "C" (higher than "D"). If the liquid level rises to a preselected elevation "B" (higher than "C"), the high level alarm shall be activated. When the liquid level falls to a persecuted elevation "E" (lower than "D"), both pumps shall be stopped.

The control panel shall be contained in a single enclosure, fabricated of not less than 14-gauge 316 stainless steel, NEMA 4X construction. The door shall be formed with minimum lip of 3/4" and full height hinged. Closure mechanisms shall be No. 3 S.S. fasteners with No. 3 keepers as manufactured by Simmons Fasteners, or approved equal.

The interior door shall be constructed of .080-inch thick 6061-T6 aluminum. The interior and exterior doors shall be provided with a stop mechanism to hold the doors open which working in the panel. A rain shield shall be provided.

The control panel shall include the following items plus any other items shown on the plans or required for a complete, operational installation.

Circuit breakers with combination full voltage motor Starters for each pump.

"Hand-Off-Auto" selector switch for each pump, heavy duty oil tight type (toggle switches will not be acceptable).

Automatic pump alternator with test switch.

Duplex receptacle with 15-amp circuit breaker 115V GFI.

Control power circuit breaker.

Main circuit breaker.

Emergency power minimum 100-amp circuit breaker and
100-amp, 4 wire, 3 pole, reverse service generator receptacle. Emergency power to match main breaker size.

Lightning arrestor, 3-phase.

Surge capacitor.

Phase monitor, to prevent energization of pump motors in the event of phase failure or reversal or low voltage.

Indicating light for each level regulator (float switch).

"Running" indicating light for each pump.

Elapsed time meter for each pump, 2-1/2", 6-digit non-reset.

Emergency/High level alarm light and horn, 12 VDC with battery back-up.
The panel shall include back-up circuitry to permit one pump to operate with a normal drawdown in the event of failure (open circuit) of the "stop" level regulator.

Spare parts to be furnished with the panel include:

2 - 120V Relays
1 - Alternator
1 - Phase Monitor
12 - Lamps
12 - Fuse Links
1 – Intrinsically Safe Barrier
1 – Alarm Controller

A copy of the panel wiring diagram shall be attached to the inside of the outer panel door. An extra copy shall be given to the District.

The basic components and layout of the control panel are shown on Standard Details 31, 32, 33 and 34.

Substitutions of these components will be permitted for approved equal, interchangeable products upon obtaining specific written approval from the District.

150.07 Telemetry

Lift stations shall be provided with a District standard radio telemetry system by Data Flow Systems. Telemetry systems shall provide monitoring and control for the following signals;

1. Digital
    a. Power Fail
    b. High Level
    c. Pump # 1 Fail
    d. Pump # 2 Fail
    e. Pump Run # 1
    f. Pump Run # 2
    g. Spare
    h. Spare
    i. Generator General Alarm (Permanent Standby Generator Stations Only)
    j. Generator Low Coolant (Permanent Standby Generator Stations Only)
    k. Generator Low Fuel (Permanent Standby Generator Stations Only)
    l. Generator Fail to Start (Permanent Standby Generator Stations Only)

2. Analog
    a. Wet Well Level
    b. Spare
    c. Spare

An alternative cellular telemetry system may be available. Coordinate with the District's Director of Engineering Services for specifics.

150.08 Access Hatches & Fall Through Safety Prevention Systems

The wetwell and valve vault access hatch shall be single leaf design with a minimum clear opening at 36" x 48", but must also meet the minimum clear opening as required by the pump manufacturer. The frame shall be a minimum: 3" x 3" x 1//4" aluminum angles and the cover shall be 1/4" aluminum angles and the cover shall be 1/4" aluminum diamond pattern. The hatch shall be completed with anchor straps, automatic hold open arm and cover release, forged brass or stainless steel hinges with stainless steel pins, hasp and staple lock, flush type handles, upper guide holders and sensor cable holder. The cover shall be reinforced to withstand a live load of 300 lbs./sq. ft. unless in areas that may experience traffic. Hatches in traffic areas shall meet H-20 design loading criteria, at a minimum. Hinges shall be of the interior type.

All stations 6' in diameter or larger, shall be provided with fall through safety prevention systems. All systems will be of the grate type as manufactured by U.S.F. Fabrication, Inc., or approved equal able to withstand a pedestrian load of 300 lbs/sq. ft.. The safety grate shall be constructed of aluminum. All hardware must be of 316 stainless steel.

The configuration of the hatch and safety grate shall be such that opposing sides of the wetwell opening are protected when the safety grate is in the upright position. Safety chains shall be provided from the safety grate to the hatch to protect adjacent sides.

10' diameter and larger wetwells and tri-plex stations will require custom hatch and safety grate designs to be determined in coordination with the District's Engineering Services.

150.09 Floats

Float switches with internal single pole mercury switch shall be installed in the wet well to control the operation of the pumps with variations of liquid level in the wet well. The float switches shall be sealed in a polypropylene casing with a firmly bonded electrical cable protruding. Floats shall be Roto-Float type S as manufactured by Anchor Scientific Inc..

150.10 Wetwell Level ~~Sensor~~Transducer / Transmitter

See Section 180

150.11 Valves

See Section 130

150.12 Pipe and Fittings

See Section 110 for pipe and fittings.

150.13 Wetwell and Valve Vault

See Section 121 and standard details SD-31

150.14 Wet Well via Caisson Construction

Wet wells installed via the caisson method are allowed only with prior approval by the Loxahatchee River District. Final acceptance of the wet well by caisson method will only occur when it is determined that:

- Wet well has no structural damage, deep gouges and and/or cracks.
- Wet well has been installed at the design depths indicated.
- Wet well is plumb. The maximum deviation shall be 1/8" per foot of each precast section.
- Wet well tremie seal is leak free and there are no continually damp areas prior to the installation of the secondary pour.
- Wet well sections show no evidence of separation and that the structure has not settled.
- Wet well walls, specifically at the joints, are flush and without overhang.

- Wet well was installed in proper sequence.

If any of the above items are not met to the satisfaction of the District, the wet well will be rejected and it will be the contractor's responsibility to remedy the problem at his own expense. The contractor shall also provide a warrantee that the wet well will meet the above requirements for a 1-year period from the date of District acceptance.

150.15 Submittals

The following submittals are required for approval prior to construction of the project.

1. Lift Station Calculations to include
    a. Average Daily Flow
    b. Peak Hour Flow
    c. System Head Curves
    d. Wetwell Cycle Time
    e. Anti-Flotation
2. Lift Station Site Plan
3. Pump and Motor
4. Pipe and Fittings
5. Valves
6. Concrete Structures
7. Control Panel – complete detailed design including electrical schematic, panel layout, bill of materials
8. Panel Rack
9. Base Plates
10. Rails, Brackets and Adapters
11. Conduit and Cable
12. Aluminum Hatches and Safety Grates

Detailed wiring diagrams of the entire installation including main power supply, pump motors, control circuits, alarm circuits, and metering circuits shall be submitted. The diagrams shall include schematic and connection wiring diagrams.

Four (4) copies of detailed installation drawings including wiring diagrams, pump curves and maintenance and operating manuals shall be submitted to the District at the time of initial start-up.

150.16 Services to be Furnished by Manufacturer of Equipment

The services of a factory-trained representative shall be furnished for the lift station start-up. The representative shall check all electrical components, wiring, and pump operations.

150.17 Operation and Maintenance

Upon completion and successful startup of the lift station the District will be provided with two copies of the lift station operation and maintenance manual. The manual shall include operation and maintenance detail including service intervals for all equipment provided with the lift station. Operation and maintenance manuals shall also include AS-BUILT drawings for the lift station, control panel, wiring schematics and appurtenances.

150.18 Warranty

The pump manufacturer shall warrant the pumps for a period of five (5) years from the date of pump manufacturer's start-up. The warranty shall include a minimum 100% coverage of the manufacturer's shop labor and parts for the first eighteen months, then 50% coverage through the third year, and then 25% coverage through the fifth year.

END OF SECTION 150

SECTION 151

LOW PRESSURE SEWER SYSTEMS

151.01 General Intent

It is the intent of the District to provide sanitary sewer service to the citizens, businesses, and industry of the area in a manner which maximizes use of existing facilities, minimizes environmental damage, and provides solutions to existing problems.

Gravity collection systems with central lift stations are the preferred methods of collecting and transporting sewage to the regional facilities. All property owners should anticipate connection via these conventional facilities unless otherwise directed by the District.

The District recognizes that the construction of gravity sanitary sewer lines is not conducive to all areas, and that utilization of an alternative system may be necessary to provide access to regional facilities.

The District may at its sole discretion allow or direct the utilization of LPSS where it is determined to be in the best interest of the District. The District may direct the use of LPSS to minimize the impacts of gravity sewer construction upon existing neighborhoods or upon environmentally sensitive areas.

The use and implementation of LPSS shall be at the sole discretion of the District and no installation shall be considered as a precedent for justifying the acceptance of LPSS in a similar or like situation.

151.02 Administration

The administrative procedures for construction are set forth in the latest revision of the District Construction Standards and Technical Specifications and shall be adhered to unless specifically modified in writing by the District.

151.03 Utilization

151.03.1 LPSS for Existing Developments

For the purpose of this section, the term "existing developments" shall be considered as those areas which have previously developed on septic tanks to the extent that a substantial portion of the subdivision is now built out; or, under less prevalent circumstances, an area which has received site plan approval and is plated/subdivided based upon use of septic tanks.

The criteria for the District's determination of whether the use of LPSS is warranted includes, but is not limited to: existing developments of less than 40 homes, or in areas of high water tables, or in areas where work space for construction activities is unreasonably restricted or in areas where

available gravity collection lines have not been provided by prior construction.

Existing gravity sewer systems will be utilized to the maximum extent possible; however, LPSS may be considered in existing neighborhoods where gravity construction would be unreasonably restricted in the opinion of the District Engineer.

151.03.2 Community Grinder Systems

The use of a community grinder system is a merge of a LPSS system and a traditional gravity collection system, in that there are instances where the District would allow "grinder systems" in conjunction with small gravity system to serve a community. In accordance with Section 151.01 above, the utilization of smaller "grinder systems" with limited gravity collection systems will be encouraged in new developments where environmental concerns would be adversely impacted by the construction of a traditional non-clog lift station and/or deep gravity lines, at the sole determination of the District.

Grinder systems could be considered for:

- New Development – areas of less than 15 homes, with a suitable site for a grinder station.
- Existing Development – areas of less than 20 homes, both sides of street participating, and cost is not greater than 200% of LPSS, unless specifically requested by property owners.

151.04 Responsibility

151.04.1 District

A low pressure sewer system may consist of one or more pump stations. A pump station shall be considered as the individual pumping unit which serves a single residence, or a commercial or industrial customer. In the latter cases, the unit may contain two pumps (duplex).

All plans for the construction of any portion of an LPSS shall be submitted to the District Engineer for review and approval.

All LPSS facilities which are located within public rights-of-way shall be conveyed to the District for operation and maintenance.

Any facility, associated with an LPSS, which is located outside of the private property being served, must be within a dedicated easement or right of way. The easement shall be conveyed to the District.

The District shall be responsible for the operation and maintenance of all facilities (force mains, valves, etc.) within rights-of-way, or dedicated platted utility easements which serve more than one unit.

Property owners must execute a License Agreement for District maintenance of residential and low flow nonresidential pump stations.

151.04.2 Residential or Non-residential User Responsibilities

Each individual residential or low flow non-residential user of the LPSS system shall provide his own pump station, electrical service, force main and connection to the District owned collection/transmission lines. The District shall be responsible for the operation and maintenance of all residential and 3-phase non-residential low flow equipment serving his individual property, whether located on his property or in easements off of his property. The residential or nonresidential user shall be responsible for the installation of the pump station, control panel, force main valves, and all appurtenances which are a part of the system solely serving the individual user. Maintenance will be provided in accordance with the License Agreement provisions.

Low Pressure Systems for commercial and single phase low flow non-residential use shall: 1) require a duplex grinder pump system, and 2) be operated and maintained by the property owner in accordance with P.B.C. Health Dept./Florida DEP requirements

The user shall provide electrical power from his meter to the control panel, and all operating costs shall be users responsibility.

151.05 Submissions and Approvals

All installations of individual units shall be reviewed and approved by the District Engineer prior to construction. The District Engineering Department shall be notified at time of installation of the pumping unit and prior to connection to the District line. Connection excavations shall remain open and protected until such time as an inspection has been performed and a satisfactory connection is made.

All installations shall be made in accordance with District Technical Specifications, and local plumbing and electrical codes, and the regulations of the Florida Department of Environmental Protections.

Submittals for area lines which will be taken over by the District for operation and maintenance shall be made by a Professional Engineer, registered in the State of Florida. The District may require a hydraulic analysis from the Professional Engineer to determine if the existing District infrastructure has the capacity to accept new connections. Once hydraulic capacity has been determined available, six (6) sets of signed and sealed construction plans shall be submitted for approval. The construction shall also be inspected and certified by a Florida registered professional engineer upon completion.

Submittals for individual installations shall include a shop drawing of the pump station and control panel, and an as-built drawing showing tie-in dimensions of the force main, valves, and any electrical conduits.

The use of pumping units is restricted to specific makes and models for which the District will maintain a limited spare parts inventory for emergency situations only.

151.06 Definition

A low pressure sewer system is defined as a means of conveying sewage by individual pumping units through a small pressurized force main to a discharge point which can be part of an existing force main or gravity system.

151.07 General System Design Considerations

The following particulars should be considered in the design of any proposed low pressure system:

1. Geographical location.
2. Type of development - number of residences.
3. Topography of service area (where applicable).
4. Layout of existing or proposed service area.
5. Projected sewage flows.
6. Location of nearest existing sewer facility.
7. Soil and water table information.
8. Availability of electric power.

151.07.1 System Layout and Alignment

The pressure sewer system should be designed so that all contributory lines are branched into a main collector. "Looping" and "dead-endings" of macerated sewage in remote areas of the system shall be avoided.

Pressure lines should be laid out to provide runs as short as possible with a minimum of major change in direction.

In order to facilitate maintenance and repair, force mains should be laid outside the limits of pavement or heavy traffic areas.

All system lines shall be kept full, under a positive pressure head at all times. This can be maintained by locating the system terminus at the highest elevation, or by employment of a positive pressure control devise at the terminus.

To minimize the number of potential air pockets, pressure lines should be installed on a continuously rising grade as much as possible to predetermined points where air release devices and cleanout ports can be installed in accordance with the Standard Details.

151.07.2 Design Flow

As in any collection system, a pressure sewer system must be designed to effectively handle all sewage flow generated in the service area especially during times of peak flows.

Peak flow shall be determined by accepted sanitary sewer engineering principals and standards established by regulatory agencies. Proper design should assure that each contributing pump unit in the service area, no matter what its location or what other units are operating at the same time, will be able to deliver into the system during these peak flow system conditions at a rate sufficient to insure that there will be no sewage removal problem at any individual building or unit. A pumping rate in the range of 8-10 gal./min. is normally considered sufficient.

151.07.3 Line Sizing and Velocities

Line sizing must be designed to insure that scouring velocities will occur in the system pressure lines at some regular interval. At the same time they must avoid excessive system pressures which can jeopardize the delivery capacity of any unit on the system.

To insure that scouring will occur during design flows, it is recommended that the velocities in the pressure lines be maintained in the 2-5 ft./sec. range at regular intervals.

Minimum service line and tap diameters for commercial connections shall be 2-inches. In the case of tying into an existing 2 or 2.5-inch main, a tee with a 2-inch outlet shall be cut in.

151.07.4 Operation of Contributing Pumping Units

A most important design consideration is that the proper operation of any and each pumping unit on the system be assured during any flow conditions which could exist. This includes the most demanding maximum peak design flow which may be seldom, if ever, encountered (such as immediately following an extended power outage).

151.07.5 System Flushing

Design shall provide for the ability to mechanically purge sewage from the system at regular intervals. Flushing connections to the force main system are shown in the Standard Details.

151.07.6 Air Release

Design shall provide for relief of air at high points along the system. Valves and piping configuration is shown in the Standard Details.

151.08 Pumping Units

The pumping units shall combine a centrifugal submersible pumping unit(s) with a patented grinding assembly which is capable of reducing sewage and its normal constituents (together with sticks, rubber, bones, rags, plastics, etc.) to a particulate slurry which can easily be transported through small diameter pipes.

The units shall be furnished complete with unit tank, electrical control panel, level controls, alarms, check and ball valves, and other necessary appurtenances as shown on the Standard Details.

Pumps shall be manufactured by Barnes and have a 1-1/4" vertical discharge outlet. Reference the District's low pressure sewer standard details (LP details) for information regarding pump models and configurations.

151.09 Piping and Appurtenances

151.09.1 Pipe

Schedule 40 PVC: Pipe shall be Type I, PVC 1120 with a hydrostatic design stress of 2000 psi for liquid at 73.4 F. Pipe shall conform to ASTM D 1785, ASTM F 480 and ASSTM D 2665.

HDPE: Pipe shall be PE 4710 with a minimum hydrostatic design stress of 800 psi for liquid at 73.4 F utilizing a 0.5 design factor. Pipe shall conform to ASTM 3035 and ANSI/AWWA C901.

151.09.2 Valves and Cleanouts

Isolation valves shall be strategically placed along the pressure main at services, junction points, changes of direction, and recommended intervals along extensive straight runs (see LP Details). Isolation valves shall be ball type made of brass and be capable of operation with a 2" operating nut and be placed within a District approved valve box. Refer to the District's LP details for specifics on which isolation valves are not required to have a valve box.

Each pumping unit shall be isolated from the low pressure force main system by a PVC ball valve (service valve) and check valve, positioned at the street right-of-way line, inside of a service box (see LP details).
This service line will typically be 1.5 inches in diameter, set in a District approved meter box, at no more than 18" depths at the right of way line (see LP Details).

151.09.3 System Wiring and Control

Each individual contributing pumping unit shall be connected by underground conduit to the individual home electrical power supply. This conduit may be laid in the same trench as the gravity service pipe to the unit tank. Wiring and conduits shall be installed in accordance with all applicable local codes and regulations.

Liquid level controls shall be a sealed mercury switch in an approved float ball. The switch shall be sealed for life with a heavy neoprene jacketed control cord permanently attached.

A high water activated alarm shall be supplied. An alarm light shall be mounted on the building or control panel in such a manner so that it will be visible to building occupants and from the contiguous street areas.

The electrical control panel shall consist of the following:

Corrosion Proof Enclosure
NEMA 3R rating
Hinged Access Panel
Lockable Latch
120V AC Control Voltage - single phase
GFI Receptacle on dead front
Audible Alarm
Rated Disconnect Switch
The electrical control panel enclosure and its components shall be UL listed.

Typical wiring diagram is shown on the District's LP Details.

151.09.4 Tanks and Covers

Tanks shall be constructed of polymer or reinforced fiberglass polyester resin and the minimum size shall be 30" x 60" for a simplex configuration. Interior surface to be 10-20 mil. thick gel coated to provide a smooth sealed surface. Lockable gasketed water tight covers shall be flat aluminum and capable of supporting a 300 lb. wheel load. The fiberglass tank shall have an integral anti-flotation flange which will anchor into a concrete collar designed to counteract uplift forces.

The wall thickness of the fiberglass tank shall be sufficient to withstand a water saturated sand load of 120 pcf with a safety factor of two (2) for all depths.

Inlet hubs shall be as shown on the District's LP details. All hardware shall be stainless steel and be leak proof sealed.

The cover (lid) shall be 2/3^{rds} hinged single leaf, rated at 300 lbs/sq. ft and be lockable. The lid shall be set at a minimum, six (6") inches above final grade.

Conduit opening shall be sealed with an approved duct seal.

Float and wire hanger bracket shall be stainless steel (Type 304).

All interior piping shall be Schedule 80 PVC. A PVC union on the horizontal discharge pipe shall allow for the quick removal of the grinder pump assembly. The discharge line inside the tank shall also have a 1.25 inch PVC ball type check valve located inside the tank.

END OF SECTION 151

SECTION 160

VARIABLE SPEED/PLC CONTROL PANELS

160.01 General

This section provides for design, construction, installation and start-up of a custom power and control panel by a qualified panel manufacturer. The panel and components shall comply with the requirements of this specification and other sections and standard details of the District's Manual of Minimum Construction Standards and Technical Specifications.

This section is generally used for variable speed submersible wastewater lift stations greater than 20HP

160.02 Submittals

Submittals for the power and control panel shall include but not be limited to the following:

1. Panel materials of construction, layout and dimensions.
2. Anchoring details to concrete slab
3. Wind load calculations (if required by permitting authority)
4. Scaled dead front layout
5. Scaled back plan layout
6. Scaled component layout
7. Power, Instrumentation, Radio Telemetry and Control wiring schematics

160.03 Panel

The control panel shall be NEMA 4X ground mount enclosure with double doors and leg kit for floor standing. The panel shall be minimum thickness 12-gauge 316 stainless steel, enclosure and doors. The doors shall be formed with minimum lip of 3/4", full height concealed hinges, stainless steel door clamps on non-hinged sides and pad-lock hasps. The center post shall be removable for full access to the panel interior. A rain/drip ledge shall be provided over the doors. Sun shields shall be provided on top, east, west and south facing sides.

The interior doors/dead fronts shall be construction of minimum 0.080 inch 6061-T6 aluminum.

Both exterior and interior doors shall have a mechanism to hold the doors open.

The panel shall be manufactured by Hoffman or approved equal.

The control panel shall be designed and tested in conformance with UL 508.

160.04 Operating Protocol

The power and control panel shall provide for manual and automatic operation of the lift station pumps utilizing ~~an ultrasonic level controller~~a level transducer / transmitter, programmable logic controller and variable speed drives. The station operating protocol shall be as follows.

1. Operating Protocol 1: Level Control

    a. ELEV A all pumps off
    b. ELEV >= B lead pump on. speed adjust to maintain level
    c. ELEV >=C lag 1 pump on. lead and lag 1 match speed and adjust to maintain level
    d. ELEV >=D lag 2 pump on. lead, lag 1 and lag 2 match speed and adjust to maintain level
    e. ELEV E all pumps on 100% speed
    f. LEVEL DECREASNG/MATCHED PUMP SPEED BELOW 50% for X seconds lag 2 off. Lead and lag 1 match speed adjust to maintain ELEV C.
    g. LEVEL DECREASING/MATCHED PUMP SPEED BELOW 50% for Y seconds lag 1 off. Lead adjusts speed to maintain ELEV D.

2. Operating protocol 2: Constant Speed

    a. ELEV INCREASING
        i. ELEV >=B lead pump on. N% speed.
        ii. ELEV >=C for X seconds. Lag 1 on. N% speed.
        iii. ELEV >=D for X seconds. Lag 2 on. N% speed.
    b. ELEV DECREASING
        i. ELEV <=C for X seconds. Lag 2 off.
        ii. ELEV <=B for X seconds. Lag 1 off.
        iii. ELEV <=A for X seconds. All pumps off.

3. Operating protocol 3: Manual/Hand

    a. With the HOA selector switch in Hand the selected pump shall turn on and speed be manually adjusted through the AFD. In Hand, all alarms shall function, but pump operation will not be prevented except for specific pump manufacturer alarms in place to prevent hard to the pump and/or motor.

4. Alarm Functions

    a. With the station in Hand, Off or Auto the alarm functions shall be fully operable.
    b. Alarms shall be available for the following
        i. Pump Out of Service, each pump.
        ii. Pump Fail to Run, each pump
        iii. AFD Fault, each drive.

iv. ATS Fault
v. Generator Fault
vi. UPS Fault
vii. Communication Fault
viii. Wetwell High Level

c. The station shall have two high level alarm systems.
   i. Alarm 1: PLC based alarm system using a preset high level as read from the pressure transmitter. This alarm will activate onsite and offsite audible and visual alarms including the following.
      1. Audible Alarm Horn
      2. Visual Alarm Light
      3. High Level indicator located on the dead front inside the panel.
      4. Alarm indication on the Panel PC
      5. Alarm indication in the PLC
      6. Alarm indication to the DFS Radio Telemetry System
      7. Alarm indication in the Plant VT SCADA system.
   ii. Alarm 2: Back up to Alarm 1 using a high level float switch inside the wetwell. This alarm will activate onsite and offsite audible and visual alarms including the following.
      1. Audible Alarm Horn
      2. Visual Alarm Light
      3. High Level indicator located on the dead front inside the panel.
      4. Alarm indication on the Panel PC
      5. Alarm indication in the PLC
      6. Alarm indication to the DFS Radio Telemetry System
      7. Alarm indication in the Plant VT SCADA system.

5. Emergency Standby Generator Limited Operation – On emergency standby generator power station operation shall be limited to 2 pumps.

6. Pump Off – Back Up Float System

   a. With the station in Auto a low level float in the wetwell will automatically shut off all pump operation until the high level float switch is activated.

Programming shall allow for operators to change all variables noted above though a simple interface via a laptop computer or the HMI.

160.05 Adjustable Frequency Drive:

Adjustable frequency drives shall be Eaton PowerXL DG1 Series. Drives shall be rated for 480V, 3 PH, 60 HZ. Drives shall be variable torque, pulse width modulated. Drive horsepower rating shall equal or exceed maximum pump motor horsepower requirements at any point on the pump curve.

The drive shall include a keypad interface that provides the following functions and displays at a minimum; Output frequency, frequency reference, motor speed, motor current, motor torque, motor power and motor voltage.

The drive shall include the following protective features, at a minimum; over current, over voltage, inverter fault, under voltage, input phase loss, output phase loss and under/over temperature.

The drive shall include the following field programmable I/O, at a minimum; DIGITAL: eight 24VDC digital inputs and eight 24VDC digital outputs including local/remote, drive ready, fault, running, overload, set speed, current. ANALOG: two 4-20 mA analog outputs, two 4-20 mA analog inputs.

The drive manufacturer shall provide services of a field service technician to assist in installation, setup and training.

Drives shall come with a minimum 12 month warranty.

160.06 Programmable Logic Controller: See Section 169

160.07 Uninterruptible Power Source (UPS)

Power and control panels shall be provided with an UPS for the control and telemetry system. The UPS shall be Eaton 5P Tower UPS with an Eaton Network Card-MS. The UPS shall be sized by the Contractor based on control and radio telemetry loads and to provide a minimum 10 minutes of backup power to these systems in the event of power failure.

The UPS shall provide power through an APC 120V 10 outlet rack mounted automatic transfer switch model number AP7750A. In the event of UPS failure the ATS shall switch to commercial power, if available.

160.08 Operator Interface/Panel PC

Power and control panels shall be provided with an operator interface/panel PC. The panel PC shall be Phoenix Contact USA Panel PC – VL2 PPC 2000 – 2400334:

Order Key **2400334/D29/A20/I32/R26/M52/M00/OS64/T00/S00/EF00/PS01**

The panel PC shall come with the following specific options:

1. Passive cooling system and fanless design for industrial applications
2. Panel PC (PPC): IP65 rating in front panel and IP20 rating in back. The control panel design shall ensure only IP65 areas are exposed when the dead front is closed.
3. Display shall be 47.0 cm / 18.5" TFT (Thin Film Transitor)
4. Screen resolution 1366 x 768 Pixel(s) (WXGA)
5. LED Backlighting

6. Intel® Celeron® N2930 1.83 GHz/2.16 GHz processor
7. Operating system shall be Windows® 10 IoT Enterprise LTSB 2015 (32-bit), Multi-language
8. RAM 4 GB DDR3 SODIMM
9. Mass storage - 2,5" SSD (MLC), 160 GB
10. Network 2x Ethernet (10/100/1000 Mbps), RJ45
11. Interfaces 1x COM (RS-232/422/485)
12. 4x USB 2.0
13. Monitor output 1x DisplayPort
14. Service life of battery 5 years
15. Environmental Conditions
    a. Degree of protection IP65 (front), IP30 (back)
    b. Ambient temperature (operation) 0 °C ... 45 °C (with HDD)
    c. Ambient temperature (storage/transport) -40 °C ... 70 °C
    d. Permissible humidity (operation) 5 % ... 95 % (non-condensing)
    e. Permissible humidity (storage/transport) 5 % ... 95 % (non-condensing)
    f. Power supply unit 24 V DC ±20 %

160.09 Ethernet Switch

Power and control panels shall be provided with an Ethernet switch to connect all networked devices including but not limited to the Panel PC, Uninterruptible Power Source and PLC. Ethernet switches shall be Allen Bradley Stratix 5700.

160.10 Ventilation

The panel shall include forced ventilation sufficient to maintain panel interior temperatures and conditions within the ranges set by the manufacturers of equipment located within the panel. Ventilation shall include filtration to prevent the entrance of dust, debris and water from entering the panel.

160.11 Level Transducer/Transmitter: See Section ~~169~~180

160.12 Circuit Breakers:

Circuit breakers shall be Square D H-Frame sized per panel and pump power requirements.

160.13 Miscellaneous Materials and Requirements:

1. In general, except as specified otherwise in this section or the drawings, panel components shall comply with the Bill of Materials, on Sheet SD-34 of the District's Manual of Minimum Construction Standard and Technical Specifications.
2. One Duplex 15 amp 120 V GFCI receptacle with dedicated circuit breaker.
3. Two overhead fluorescent or LED lights with integral on/off switch mounted inside the panel behind each door in front of the dead front. The lights shall be 120V.

4. One "Hand-Off-Auto" selector switch for each pump, heavy duty oil tight type (toggle switches will not be acceptable).
5. One control power circuit breaker.
6. One main circuit breaker.
7. Secondary Backup Generator circuit breaker with Main Breaker Lockout.
8. Secondary Backup Generator receptacle.
9. Lightning arrestor, surge protector and phase monitor. The phase monitor shall lock out pump operation in the event of phase loss, reversal or low voltage.
10. One "RUN" indicator light for each pump.
11. One "FAIL" indicator light for each pump.
12. One Elapsed time meter for each pump, 2-1/2", 6 digit non-resettable.
13. Independent 12VDC High Level Alarm System -
    a. Alarm light, 12 VDC, with Flasher, outdoor type mounted on top of the control panel.
    b. Alarm Horn, 12 VDC, outdoor type mounted on side of control panel.
    c. High Level Alarm Circuitry to include high level float in the wetwell. Alarm circuit to match the District Standard, including the intrinsic safe circuit in the wetwell.
    d. This alarm shall act independently from the PLC
14. A copy of the panel wiring diagram asbuilts and bill of materials shall be attached to the inside of the outer panel door. An extra copy shall be given to the District.

Spare parts to be furnished with the panel include:

2 - 120V Relays
1 - Alternator
1 - Phase Monitor
12 - Lamps
12 - Fuse Links
1 – Intrinsically Safe Barrier
1 – Alarm Controller

160.14 System Integration

~~System integration shall be performed by~~

~~Frank Sczurek, Process Analyst~~
~~Process Control Consultants~~
~~PO Box 1174~~
~~Loxahatchee, FL 33470~~

~~Phone: 561-791-1511~~
~~Email: **Error! Hyperlink reference not valid.**~~

System integration shall include integration of the adjustable frequency drives, level transmitter, level transducer, programmable logic controller, uninterruptable power source, generator

controller, panel PC, automatic transfer switch, Data Flow Systems RTU and the District's VT Scada System for a fully functional system capable of implementing the required operating protocol and monitor/control functions as detailed in the specifications and the System Block Diagram.

System integration shall include screen development. At a minimum the following screens shall be provided at the Panel PC.

1. Overview – shows diagrammatic representation of the lift station pumps, drives, wetwell, generator and ATS and include equipment status and alarm and HOA functions. This screen shall also display, at a minimum, pump speed, pump hours, wetwell level, power source, voltage and current.
2. Setup Screen – allows setup of station parameters to include lead, lag, standby selection, time delays, tandem pump operation criteria, pump speed limits, operating levels and alarm levels,
3. Alarm/Fault Screen – displays a complete list of programmed alarms, indicates current/active alarm, allows alarm acknowledgment, allows setup of alarm parameters.
4. Trend Screen – Provide trending for lift station parameters including pump speed, wetwell level, estimated flow (based on correlation between pump speed, pump head and pump curve).

The following minimum screens shall be provided in the Plant VT SCADA system. Screens shall conform in style and function to the District's existing VT SCADA screens.

1. Station Status
2. Historical Trending

160.15 Radio Telemetry

The power and control panel shall include dry contacts for the radio telemetry unit. Dry contacts shall be provided for all I/O listed below.

1. Pump Status
2. Pump Fail
3. Pump Call to Run/Off
4. Commercial Power
5. Auxiliary Power
6. High Alarm – back up float
7. Generator General Alarm
8. Generator Low Coolant
9. Generator Fuel Alarm
10. Generator Fail
11. Pump Speed
12. Pump Disable
13. Wetwell Level
14. 2 Spare Digital
15. 2 Spare Analog

END OF SECTION 160

SECTION 170

EMERGENCY STANDBY DIESEL GENERATOR SET

161.01 General

The generator shall provide emergency power to the lift station adequate to operate the station and all appurtenances. A detailed sizing report shall be submitted for approval.. The generator set shall be 130 C (266 F) temperature rise at 0.8 PF, 480/277V, 3 phase, four wire at 500' above sea level and ambient temperature 25C (77 F). The generator set shall be EPA certified for this specific application (permanent standby emergency power) but not have less than an EPA Tier III emission certification.

The generator set shall include an automatic transfer switch, battery charger, batteries, sound attenuating/hurricane rated/weather resistant enclosure and exhaust silencer and come as a complete package from the manufacturer.

Work shall also include a generator sizing report based on design loads detailed in the contract including pumps, controls, instrumentation, lightening and miscellaneous loads verifying manufacturers concurrence with the above sizing.

161.02 Applicable Codes, Standards and Specifications

The installation shall comply with all applicable rules, regulations, and ordinances of the following:

National Electric Code (NEC)
Occupational and Safety Health Standards (OSHA)
Florida Building Code (FBC)
National Fire Prevention Association (NFPA)
Underwriters Laboratory (UL)
International Standardization Organization (ISO)
National Electrical Manufacturers Association (NEMA)
American National Standards Institute (ANSI)
Institute of Electrical and Electronics Engineers (IEEE)
Environmental Protection Agency (EPA)
Town of Jupiter
Palm Beach County

161.03 Submittals

The generator set submittal shall include drawings and schematics that fully depict the product being provided. Submittals shall include the following:

A. Generator sizing report
B. Generator set plans and elevations.
C. Enclosure including plans and elevations.
D. Fuel tank including plans and elevations.
E. Engine, combustion air, exhaust, fuel, lubrication and cooling performance

specifications.

F. Alternator specifications.
G. Fuel consumption rates.
H. Generator set rating (Prime at 105 C temperature rise)
I. Exhaust silencer.
J. Generator breaker
K. Battery charger.
L. Controller.
M. Enclosure including sound attenuation, wind rating and weather rating (wind driven rain proof).
N. Tier Rating.
O. Start-up report
P. Factory production testing.

161.04 Acceptable Manufacturers

The generator set, fuel tank and enclosure shall be supplied by a single manufacturer. The generator set shall be manufactured by Caterpillar, Kohler, Cummins/Onan, Detroit Diesel or Generac.

161.05 Warranty

The generator set and ATS shall have a 1-year warranty from the date of acceptance by the District.

161.06 Diesel Engine Generator Set

The engine shall be water-cooled four-stroke compression ignition diesel and rated to drive the generator set after derating for elevation (altitude) and temperature.

Voltage regulation shall be within 5% of rated voltage at constant load. Frequency regulation shall be within 3%. Total harmonic distortion shall not exceed 5%.

When loaded voltage dip shall not exceed 20% and frequency dip shall not exceed 10%. Recovery time shall not exceed 3 seconds.

The generator shall be synchronous, four pole, revolving field, permanent magnet, drip proof, air cooled and direct connected to the engine. Insulation shall be Class H and suitable for use in wind driven rain and salt spray environments. Temperature rise shall not exceed 130 C at standby rating and 105 C at prime rating.

A. Governor: The generator set shall be equipped with an electronic governor that maintains frequency regulation within 3%.

B. Fuel System: The fuel system shall be equipped with a 5-micron fuel filter/water separator. The filter shall be sized to handle 125% of the fuel flow at full load. The fuel pump shall be engine driven, positive displacement and mechanical.

The fuel tank shall be sized for min. 72 hour run time at full load based on published fuel consumption rates provided by the generator set manufacturer. The fuel tank shall be belly style installed beneath the enclosure but not form a structural member of the enclosure. Fuel fill shall be readily accessible without opening the enclosure. The tank shall be fitted

with a local, mechanical fuel gauge. The tank shall be double walled with inspection port for the interstitial space.

C. Space Heater: The generator shall have a 120V space heater sized to maintain the generator windings above temperatures typical in the installation location.

D. Jacket Water Heater: The generator shall have a 120V jacket water heater sized to maintain the engine block at 90 F.

E. Battery Charger: The generator shall have a 120V powered 12V or 24V battery charger with trickle charge/maintain function and standard charging capability. The battery charger shall be sized based on charging requirements and sizes of batteries provided as part of the standard generator set.

F. Batteries: Batteries (12V or 24 V) based on the charging and starting systems shall be provided. Batteries shall be easily accessible for maintenance and replacement and be installed in a corrosion resistant (fiberglass or plastic) battery tray.

G. Cooling System: The cooling system shall incorporate an engine driven fan, enclosure mounted radiator and ethylene glycol based coolant. Access to the radiator cap shall allow for filling of coolant without the need for additional funnels, piping, etc.

H. Enclosure: The enclosure shall be sound attenuating (78 dB(A) at 7 meters), weather proof, aluminum and wind rated for min. 165 MPH (or current PBC requirement). The enclosure shall be coated with manufacturers standard coating system and color.

Sound attenuating material shall be moisture and weather resistant, securely fastened to the enclosure interior and protected from damage during routine maintenance and operation.

The enclosure shall house the generator muffler and all generator appurtenances (controller, radiator, breaker, etc.) except the fuel tank.

All hinges, latches and locks shall be corrosion resistant stainless steel.

I. Controller: The generator controller shall provide/display the following functions.

a. Programmable generator exercise schedule.
b. Cool down period prior to shutoff.
c. All phase AC voltage
d. Current output
e. Each phase AC voltage
f. Utility status
g. KW power output
h. Power factor
i. Total runtime
j. Last runtime
k. Engine Speed
l. Overcrank
m. Oil Pressure
n. Fuel Pressure
o. Water Temperature
p. Coolant Level
q. Battery Voltage

r. Frequency
s. Off/On/Auto(Remote)
t. Alarms
    i. Oil Pressure
    ii. Coolant Temperature
    iii. Coolant Level
    iv. Low Fuel Pressure
    v. Engine Speed
    vi. Overcrank
    vii. Battery Voltage

J. Generator Main Circuit Breaker: The generator set shall be provided with a generator main breaker mounted and wired on the generator set. The main breaker shall be UL listed, 480/277 VAC, 200 ampere and configured such that load side cables enter through the bottom of the enclosure.

K. Air Filter: The generator set shall be provided with a dry type replaceable air filter.

L. Mounts: Mounts for the generator set to the frame shall be spring type vibration isolation mounts.

M. Exhaust Silencer: The exhaust silencer shall limit exhaust noise to 78 dB(A) at 7 meters. All enclosure interior exhaust piping shall be insulated to maintain a surface temperature not to exceed 150 degrees F. The insulation shall be installed so that it does not interfere with other components. The insulation shall not be asbestos base.

161.07 Automatic Transfer Switch

The automatic transfer switch shall be UL listed, electrically operated, 480/277 VAC, 3 phase, 60 Hz, 200 ampere and incorporate a mechanical lockout for only normal or emergency power. The use of molded case circuit breakers, contactors or components that are not intended for continuous duty, repetitive switching and transfer service will not be allowed.

The switch shall be mounted in a NEMA-4XSS enclosure.

The switch shall provide the following functions:

A. Phase voltage sensing and transfer of power based on voltage of primary or emergency source. Transfer limits shall be adjustable for pick-up (85%-100% of nominal voltage) or drop-out (75%- 98% of pickup).

B. Three phase voltage sensing and transfer of power based on voltage of primary or emergency source. Transfer limits shall be adjustable for pick-up (85%-100% of nominal voltage) or drop-out (fixed at 84%086% of pickup).

C. Three phase frequency sensing and transfer of power based on frequency of primary or emergency source. Transfer limits shall be adjustable for pick-up (90%-100%) and drop out (fixed at 87%-89% of pickup).

D. Time delay start in accordance with NFPA 110, Level 1, Type 10 (10 seconds).

E. Time delay transfer to emergency power after start. Transfer time shall be adjustable from 0-120 seconds.

F. Time delay transfer to primary power. Transfer time shall be adjustable from 0-30 minutes.

G. Time delay shutdown of emergency generator after transfer to primary power. Transfer time shall be adjustable from 0-15 minutes.

H. Status display:

a. Primary Power Status
b. Emergency Power Status
c. Current Power Source
d. Time to transfer (in consideration of time delays) to/from emergency
e. Transfer complete to/from emergency
f. Time to emergency generator stop

161.08 Testing

The generator set shall have factory production testing completed at the rated load. The production testing shall incorporate all parameters and limits identified in this specification. A factory certified record of testing shall be provided in the submittal.

After installation the manufacturer shall provide start up and testing services. Services shall conform to NFPA 110 and include start and shut down cycles, automatic start and load bank test at full load for 2 hours, power transfer and operation of the station on emergency power for not less than 2 additional hours.

161.09 Start-up and Instructions

On completion of the installation, start-up shall be performed by the generator set service representative. Operating and maintenance instruction manuals shall be supplied and operator training provided to operating personnel (minimum 2 hours training). Upon completion a start-up report shall be provided.

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END OF SECTION 170

SECTION 180

INSTRUMENTATION

180.01 General

Instrumentation as described in this specification and shown in the drawings shall be provided.

Instrumentation shall be incorporated into the design requirements of the Contractor utilizing the equipment and materials included in this specification.

All electrical components of the system shall operate on 120 volt, single-phase, 60 hertz or 24 VDC power, except as otherwise noted in the specifications.

All electrical components located within the wetwell and the wetwell side of any sealed conduit fitting shall be Intrinsically Safe.

All necessary fuses or switches required by the instrumentation manufacturer for his equipment shall be provided with the equipment.

180.02 Submittals

Detailed design drawings including product specification sheets, mounting hardware, location, conduit, cable and tag numbers shall be provided.

180.03 Cable

All electronic (4-20MADC) signal wire shall be two conductors, copper, twisted pair with tape foil shield and drain wire. The shield is to be grounded at the PLC I/O panel only for single point grounding, in accordance with manufacturer's instructions. Single triad shielded cables for potentiometer signal cables shall be three conductors, copper, twisted triad with tape foil shield and drain wire. The cables must be UL listed for wet locations as defined by the NEC.

180.04 Instrument Mounts

All instruments shall be mounted in readily accessible positions that do not require entry into the wetwell for removal or maintenance. Brackets shall be fabricated to hold instruments. All brackets shall be 304 or 316 stainless steel. All mounting hardware, screws, machine bolts with washers and nuts shall be 316 stainless steel.

180.05 Conduits

All low voltage signals shall be isolated from high level control or power signals in separate conduits. All instrumentation signal conduits below grade shall be SCH80 PVC or 304 stainless steel. All underground conduits shall have grounding bushings and a No. 8 AWG copper minimum cable run to a ground lug at the termination points.

180.06 Lightning/Surge Protection

All transmitters with 4-20 MADC outputs shall have a transmitter mounted surge protection unit. The surge protection unit shall be a EDCO SS65 or approved equal.

180.07 Intrinsically Safe Pressure Transducer/Wetwell Level Sensor

Pressure transducers/wetwell level sensors shall be intrinsically safe and encased in a 316 stainless steel housing.

1. Range: 0 – 15 PSI
2. Cable: Minimum 50'
3. Output: 4 – 20 mA
4. Accuracy: +/-5%

Probes shall be Wika Instruments, LP Model LS10 with LevelGuard Anti-clog attachment or equal.

Level sensing submersible probes shall be installed in a stilling well. The stilling well shall be minimum 6" SCH 40 PVC secured to the wetwell every 7 feet with stainless steel brackets and hardware. The stilling well and probe shall be accessible from the wetwell hatch, not requiring an entry into the wetwell for maintenance or replacement of the probe.

180.08 Intrinsically Safe Pressure Transmitter

Pressure transmitters shall be intrinsically safe, backlit and mounted in the power and control panel dead-front.

1. Display: 5 Digit
2. Input: 24 VDC
3. Output: 4 – 20 mA
4. Accuracy: +/- 0.03%

Pressure transmitters shall be Precision Digital model 688 or approved equal.

180.09 Power Supplies

All instruments shall be looped powered with an appropriately rated power supply. Each instrument shall have a dedicated power supply.

180.10 Field Calibration and Testing

All instruments shall be set up, calibrated and tested in the field. The Contractor shall provide calibration sheets and testing equipment for each instrument. When installation is complete all components shall be tested to confirm operation and compliance with the contract.

180.11 Installation

All equipment shall be installed per the manufacturers requirements.

END OF SECTION 180

SECTION 181

PROGRAMMABLE LOGIC CONTROLLERS

181.01 General

This section describes the hardware and software requirements for a new Programmable Logic Controller (PLC)for a duplex or tri-plex lift submersible wastewater lift station with adjustable frequency drives, level control, emergency standby power, DFS radio telemetry unit (or) Cellular telemetry unit and appurtenances.

This section provides all labor and material required for the PLC system including the panels, equipment, software, screen development, programming, conduit, cable, tie-ins, checkout and start-up of the complete integrated system. This section shall be used in conjunction with the approved drawings and Section 161, Variable Speed/PLC Control Panels.

The latest version available at the time of installation of all PLC development software and communication driver software shall be provided.

All software and programming shall be required to perform the following functions in addition to the interlocking, monitoring and control functions indicated on the loop diagram drawings and developed in the PLC logic and OWS screen development meetings.

All enclosures shall be UL listed and NEMA rated to house the PLC, remote I/O, power supplies, and terminal blocks as shown in the drawings.

All panels shall be UL listed and labeled as a completed assembly. The panel fabricator shall furnish and install all items not specifically detailed in the drawings required to have the panels UL listed and labeled. All inspections, approvals and modifications required to have the completed panel labeled and listed by UL shall be furnished by, and the responsibility of the panel fabricator.

181.02 Applicable Standards

NEC
NEMA
UL
IEC

Temperature	IEC60068:
Relative Humidity	IEC60068:
Vibration	IEC 60068
Shock	IEC 60068
Emissions	IEC61000
ESD Immunity	IEC 61000
Radiated RF Immunity	IEC61000

EFT/B Immunity	IEC61000
Surge Immunity	IEC61000
Conducted RF Immunity	IEC61000

181.03 Operation and Maintenance Manuals

All products shall be provided with operation and maintenance manuals complete with installation, troubleshooting and technical information on the equipment provided under this contract. Manuals shall be published by the equipment manufacturer.

181.04 Training

Training and instruction shall be given by the manufacturer or representative. Training shall be 4-hours for personnel selected by the Owner in the operation and general maintenance of the PLC. This training is independent of operator training for lift station observation and operation associated with automated controls.

181.05 Submittals

Submittals shall include installation drawings and manufacturer cutsheets clearly defining the products to be provided, their accessories/options and interconnectivity with all systems. Drawings shall also include single line system diagrams and detailed line diagrams for power, input/output and tag numbers.

181.06 Spare Parts

A. One CPU
B. One of each Network Module
C. One of each type of input/output and data link module
D. One of each type of power supply

181.07 Programmable Logic Controller

1. Approved Manufacturer

The PLC system shall be a Rockwell Automation 1756 ControlLogix L7*** .

2. General

The PLC system (memory, communications, input/output modules, processor, power supplies, software) shall be a modular chassis mounted system and come complete from one manufacturer to provide a complete functioning control system as depicted in the Control Block Diagram and described in the operating protocol and of sufficient capacity for future expansion as allowed for in this specification.

Products shall be provided with conformal coatings, factory applied, to extend product life in harsh, corrosive environments.

The PLC shall be programmable and configurable from a Windows 7 and Windows 10

3. Communication

The PLC system shall be Ethernet compatible or have an Ethernet module accessible by a laptop computer. Programming functions associated with the PLC system shall be accessible through the Ethernet connection.

The PLC shall have a compatible communication modules or ports for communicating with the emergency standby generator controller exclusive of input/output modules and dry contacts. This communication port shall allow for sharing of all monitoring and alarm data associated with the emergency generator controller.

4. Input/Output Modules

The PLC shall have analog and discrete input/output modules sufficient for all proposed and future nodes identified in the control block diagram associated with the DFS Radio Telemetry System.

The PLC shall have analog an discrete input/output modules sufficient for all proposed generator status and generator fail signals.

The PLC shall have analog and discrete input/output modules sufficient for all proposed ATS, commercial, generator power signals.

The PLC shall have analog and discrete input/output modules sufficient for variable speed pump control based on level. PLC control and monitoring of variable speed drives shall be through analog and discrete input/output modules. The use of proprietary communication protocols for variable speed drive control shall be allowed.

The PLC shall have the ability to accommodate 50% additional I/O modules.

5. Central Processing Unit

The PLC configuration shall be maintained through a power loss. The PLC shall continue with operations when power is reinstated without additional programming, uploads or resets.

The PLC system shall utilize a Secure Digital (SD) card for non-volatile memory to store a user program and tag data on the PLC. The PLC system shall be

configurable to trigger the controller to save to or load from the SD card and to load to the controller from the SD card on power up.

The minimum size CPU shall be an A-B Rockwell Automation ControlLogix Series 1756-L71 with 128 MBs of optional nonvolatile memory storage.

6. Power Supplies

Power supplies shall be surge and transient protected, and shall accept input voltages of 90 to 130 VAC. The power supplies shall be fused.

All PLC systems power supplies shall be modular, allowing the power supply to be removed for replacement without affecting input/output modules or wiring.

The PLC systems shall come with redundant power supply.

7. Wire and Cabling

All PLC specific cables shall be furnished by the PLC system manufacturer and be designed for the intended use.

All other wire shall be stranded copper type TFF or MTW, 18 GA for I/O and minimum 14 GA for power.

8. Programming

The CPU shall be capable of being programmed by an external IBM compatible host device via either a serial communication port or Ethernet port on the CPU, or a parallel communication port on an input/output chassis. Serial programming shall be possible without the use of a workstation interface board.

Software shall be Rockwell Automation RSLogix 5000 Professional Edition.

All software shall be registered to the Owner.

9. Terminal Blocks

Input/output modules shall utilize removable terminal blocks to connect all field side wiring.

10. Signal Isolators, Converters and Conditioners

Instrument signals shall be 4 – 20 mA DC. Signal isolators and converters shall be provided as necessary to comply with this requirement. The devices shall be mounted in the panel and such that field wiring may be changed/maintained without affecting the devices.

All communication circuitry shall include protection against lightning, spikes and other transient surges.

11. Grounding

The grounding system of the PLC system shall be tied into the main ground system. The tie-in shall be made from the panel frames to the main ground system.

181.08 Execution

Start-up and testing services for the PLC system shall be provided. The PLC system shall be fully tested against the requirements outlined in this section and Section 161 and the operating protocol and equipment manufacturer requirements. Test procedures and checklists for approval shall be submitted prior to testing. Completed test checklists shall submitted as part of the project record documentation.

END OF SECTION 181

SECTION 190

REMOTE TERMINAL UNIT (RTU) – LIFT STATION
DATA FLOW SYSTEMS

190.01 General

The District has an existing Radio Telemetry System as manufactured by Data Flow Systems, Melbourne, Florida (321) 259-5009. For compatibility purposes, new remote terminal units will be required as specified herein from Data Flow Systems (DFS) 321-259-5009. The remote terminal unit shall include all materials, labor, tools, equipment, and appurtenances necessary for the proper completion of the work. The work covered by these specifications consists of providing all design, labor, tools, materials, and testing necessary for the supply of the RTU as described herein.

Physical location information shall be provided to DFS for radio communication study purposes. Information shall be provided in the form of GPS readings or street map with actual site location(s) clearly marked.

The RTU shall be housed in its own enclosure. The RTU enclosure shall be mounted on the antenna tower. The RTU shall be powered by 120 VAC commercial power, monitor local statuses and transmit those statuses to the existing central site when polled by the master radio. An Uninterruptible Power Source (UPS) shall be included with the RTU.

190.02 Equipment Specification

190.02.1 Remote Terminal Unit (RTU204)

The remote terminal unit shall be DFS Model RTU204. The RTU shall communicate with the central site via a two-way radio link and designed to accommodate the required plug-in function modules. Function module card connectors shall be gold-over-nickel plated to inhibit corrosion. The RTU shall be housed in a white color NEMA 4X 316 SS enclosure. All mounting hardware utilized shall be stainless steel. The enclosure shall be capable of being locked. The latches utilized to secure the door of each enclosure shall not require the use of a screwdriver to open or close.

190.02.2 Power Supply Module (PSM003)

The RTU shall include a Power Supply Module (PSM003). All function modules in the RTU shall run off DC voltage from +7.5 volts to +13 volts. The PSM shall supply +12 volts. A battery backup shall be provided in event of power failure. The power supply shall be surge protected. The power supply shall be short circuit protected by current limiting. Normal operation shall automatically resume when the short circuit overload is removed. The power supply shall be sized to operate the system with the battery removed. The power supply module shall provide a battery backed, isolated bias voltage source. The circuit breaker for the power supply module shall be part of the power supply module. Neither the use of tools nor the disconnection of any wires shall be required to replace the power supply module.

190.02.3 Backup Battery/Uninterruptable Power Supply (UPS)

The RTU shall have the uninterruptible power supply (UPS) function built in. The RTU's internal Power Supply Module shall keep the battery at a float charge. The battery shall not be damaged by deep discharges.

190.02.4 Telemetry Interface Module (TIM007)

a) The Telemetry Interface Module (TIM) shall incorporate a synthesized programmable radio.
b) A data buffer on the TIM shall enable it to query and store the I/O function module(s) status between radio polling loops until data is requested by the central site.
c) The TIM shall feature a wake up/report/sleep mode to aid in battery conservation for solar-powered applications.
d) The TIM shall support four levels of digipeating (store and forward), enabling radio messages from a different RTU to be routed to the central site.
e) The TIM shall monitor AC power on the Power Supply Module and DC Bias to the RTU I/O function modules.
f) The TIM shall incorporate a 2x8 character LCD display and 3-button user interface for field diagnostics and support data without the use of a portable computer.
g) The TIM shall incorporate a test mode switch that places the radio into a service mode.
h) The TIM shall incorporate LEDs for TX, RX, Power, CPU Fault.

190.02.5 Digital Monitor Module (DMM002)

The RTU shall include a Digital Monitor Module (DMM002). The DMM002 shall accept 12 on/off inputs of 12 to 30 volts AC or DC. Voltages from 100 to 300 volts AC or DC shall be accommodated with the use of an inline voltage converter device. Status reporting of these inputs shall have an accuracy of +- 2 seconds, the accuracy being defined as time of an occurrence to actual time recorded by the central site computer. The DMM002 shall not require interfacing relays to monitor 24 VDC, 115 VAC, 220 VAC or 480 VAC. The DMM002 shall have LEDs to indicate: the status of each input point; receive communications; transmit communications; CPU fault; and power status. The configuration of the monitor points as alarm points or monitor points (pump run time monitors) shall be operator changeable. The configuration shall not require any software or firmware changes in the system.

190.02.6 Antenna Subsystem

DFS shall determine the antenna type and height required for reliable communications. A high gain directional or omni antenna shall be used to transmit and receive data. The antenna mast/pole shall be hot dipped galvanized for corrosion protection. All mounting hardware shall be made of stainless steel. The coax cable shall be the type that utilizes an inert semi-liquid compound to flood the copper braid. The coax cable shall be of the RG-8 construction type and have the RF-loss characteristic of foam flex. The coax cable shall be RTC 400 as supplied by DFS. Type N

connectors shall be utilized at both ends of the coax and sealed with 3-inch sections of Alpha FIT321-1-0 sealant shrink tubing. The coax cable shall be secured to the mast/pole with AE112 Bandit coated 316 stainless steel cable ties. The RTU shall be protected from electrical surge or transients entering through the coaxial cable by use of a IS-B50LN-C2 Polyphaser coaxial cable surge protector.

190.03 RTU Monitor Points

The RTU shall accommodate the following I/O points.

RTU HARDWIRED I/O LIST:

DIGITAL INPUT (DI)	DIGITAL OUTPUT (DO)	ANALOG INPUT (AI)	ANALOG OUTPUT (AO)
COMMERCIAL POWER	PUMP 1 OVERRIDE	WET WELL LEVEL	NONE
AUXILIARY POWER	PUMP 2 OVERRIDE	(3) AI SPARE	
HIGH WET WELL LEVEL	*PUMP 3 OVERRIDE		
PUMP 1 RUN STATUS	PUMP 1 DISABLE		
PUMP 2 RUN STATUS	PUMP 2 DISABLE		
*PUMP 3 RUN STATUS	*PUMP 3 DISABLE		
PUMP 1 FAULT	(2) DO SPARE		
PUMP 2 FAULT			
* PUMP 3 FAULT			
GENERATOR GENERAL ALARM			
GENERATOR LOW COLLANT			
GENERATOR LOW FUEL			
GENERATOR FAIL TO START			
(7) DI SPARE			
* If applicable			

190.04 Installation

In order to insure total system integration with the existing system, secure and provide the services of Data Flow Systems, Inc. for RTU hardware.

190.05 Programming

Antenna alignment fine-tuning procedure, configuration of RTU into the system, RTU point-by point verification at the central computer, and RTU screen generation services shall be covered by the District.

190.06 Warranty

DFS shall warrant all hardware provided under this contract against all defects in material and workmanship for a period of one year. The RTU plug-in modules shall carry an additional 2-year return-to-manufacturer warranty and shall be covered against damage due to lightning and surge the entire 3-year period.

190.07 Spare Parts

Provide the following spare parts with the RTU:

a. (1) Telemetry Interface Module (TIM007)
b. (1) Power Supply Module (PSM003)
c. (1) Digital Control Module (DCM003)
d. (1) Digital Control Module (DCM004)
e. (1) Analog Monitor Module (AMM ---)
f. (1) Backup Battery
g. (1) RTU Antenna

END OF SECTION 190

SECTION 200

ADOPTION OF STANDARDS

The Loxahatchee River Environmental Control District Manual of Minimum Construction Standards and Technical Specifications were initially adopted and promulgated by the Governing Board in April, 1983.

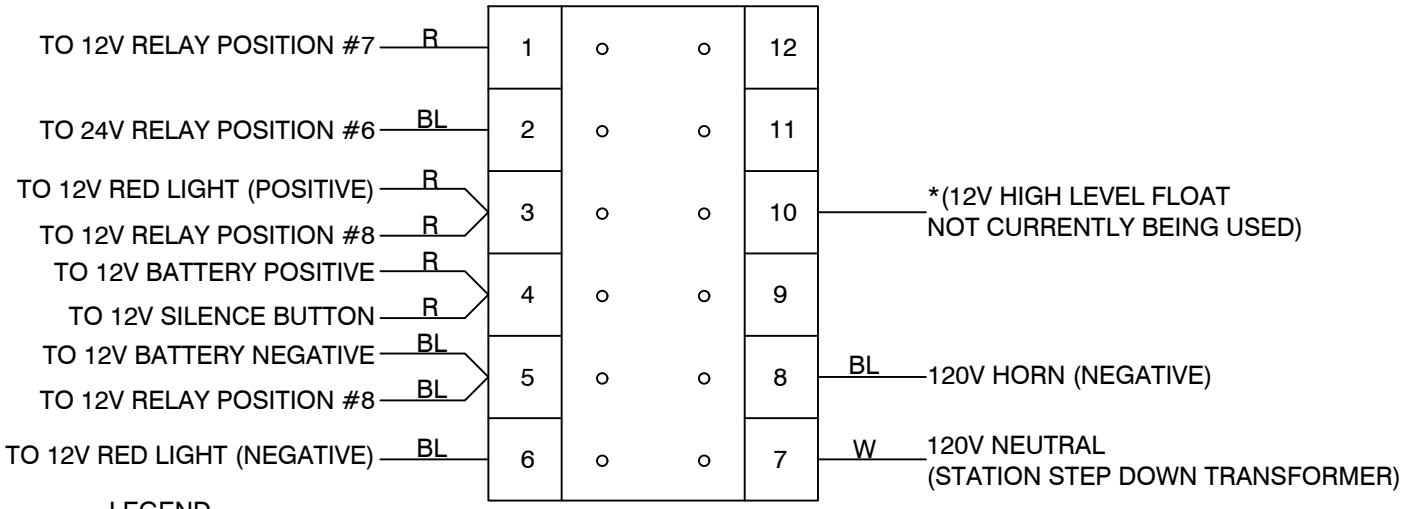
The current edition was ratified by the Loxahatchee River Environmental Control District's Governing Board, on ~~August 15, 2019~~September 15, 2022, with a vote as follows:

"THAT THE DISTRICT GOVERNING BOARD ratify the Loxahatchee River Environmental Control District's "Manual of Minimum Construction Standards and Technical Specifications", as of ~~August 15, 2019~~September 15, 2022, and authorize the District Engineer and Executive Director to update the Construction Standards and Technical Specifications from time to time, and periodically present it to the Governing Board for ratification."

Board Member	Vote
~~Dr. Rostock~~Mr. Snyder, Chairman	"~~Aye~~---"
~~Mr. Rockoff~~Dr. Rostock, Vice-Chairman	"~~Aye~~---"
~~Mr. Boggie~~Mr. Rockoff, Treasurer	"~~Aye~~---"
~~Mr. Silverman~~Mr. Boggie, ~~-~~Secretary	~~"Aye"~~---"
~~Mr. Snyder, Assistant Secretary/Treasurer~~	~~"Aye"~~

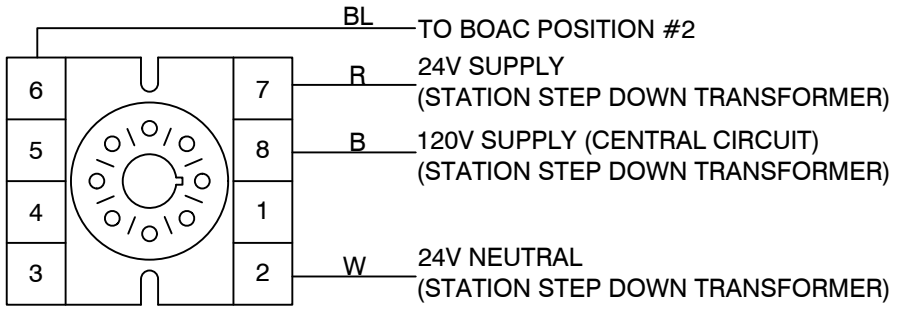
D. Albrey Arrington, Ph.D.
Executive Director
Loxahatchee River Environmental Control District

END OF SECTION 200

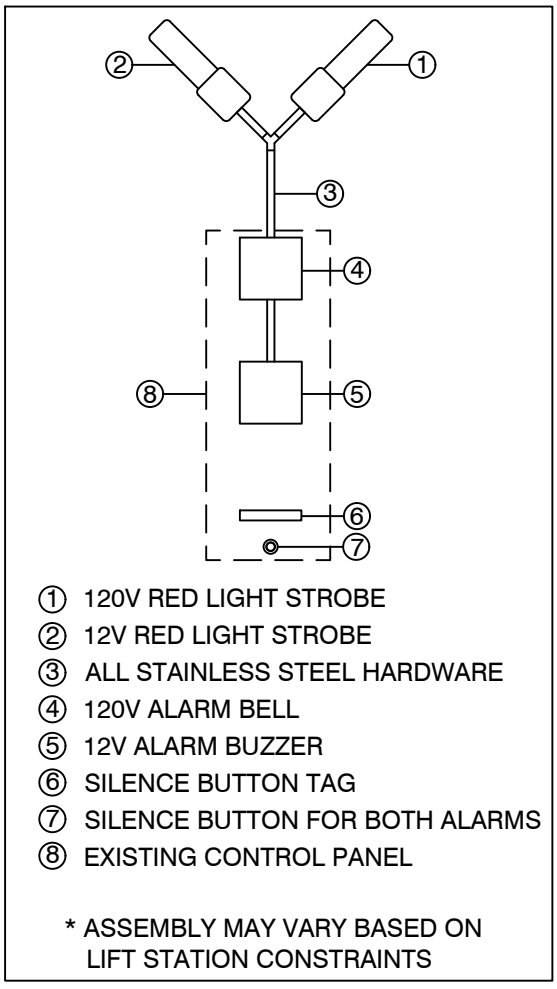


BOAC-001

LEGEND
BL - BLACK WIRE
W - WHITE WIRE
R - RED WIRE



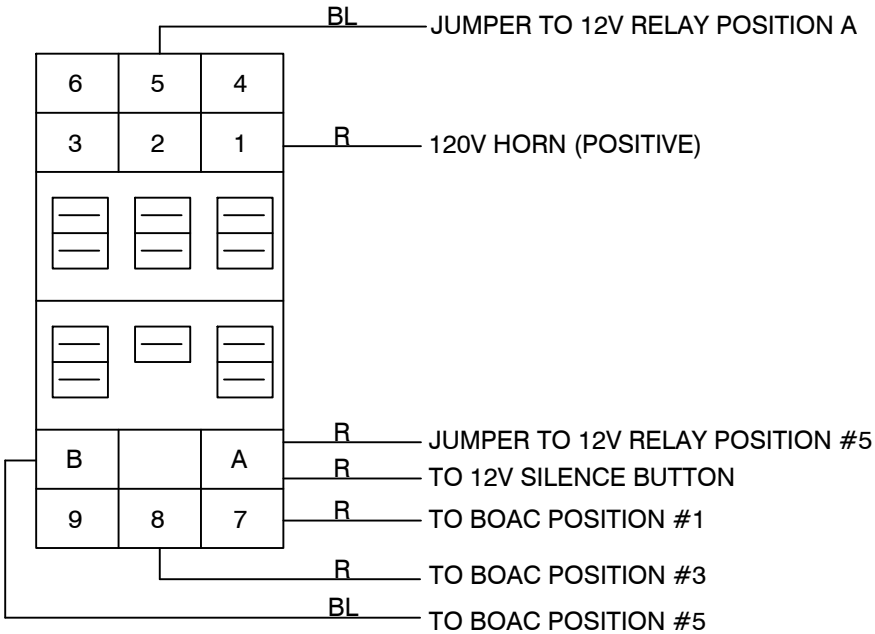
24V RELAY



① 120V RED LIGHT STROBE
② 12V RED LIGHT STROBE
③ ALL STAINLESS STEEL HARDWARE
④ 120V ALARM BELL
⑤ 12V ALARM BUZZER
⑥ SILENCE BUTTON TAG
⑦ SILENCE BUTTON FOR BOTH ALARMS
⑧ EXISTING CONTROL PANEL

* ASSEMBLY MAY VARY BASED ON LIFT STATION CONSTRAINTS

12V/120V ALARM REDLIGHT LAYOUT ASSEMBLY



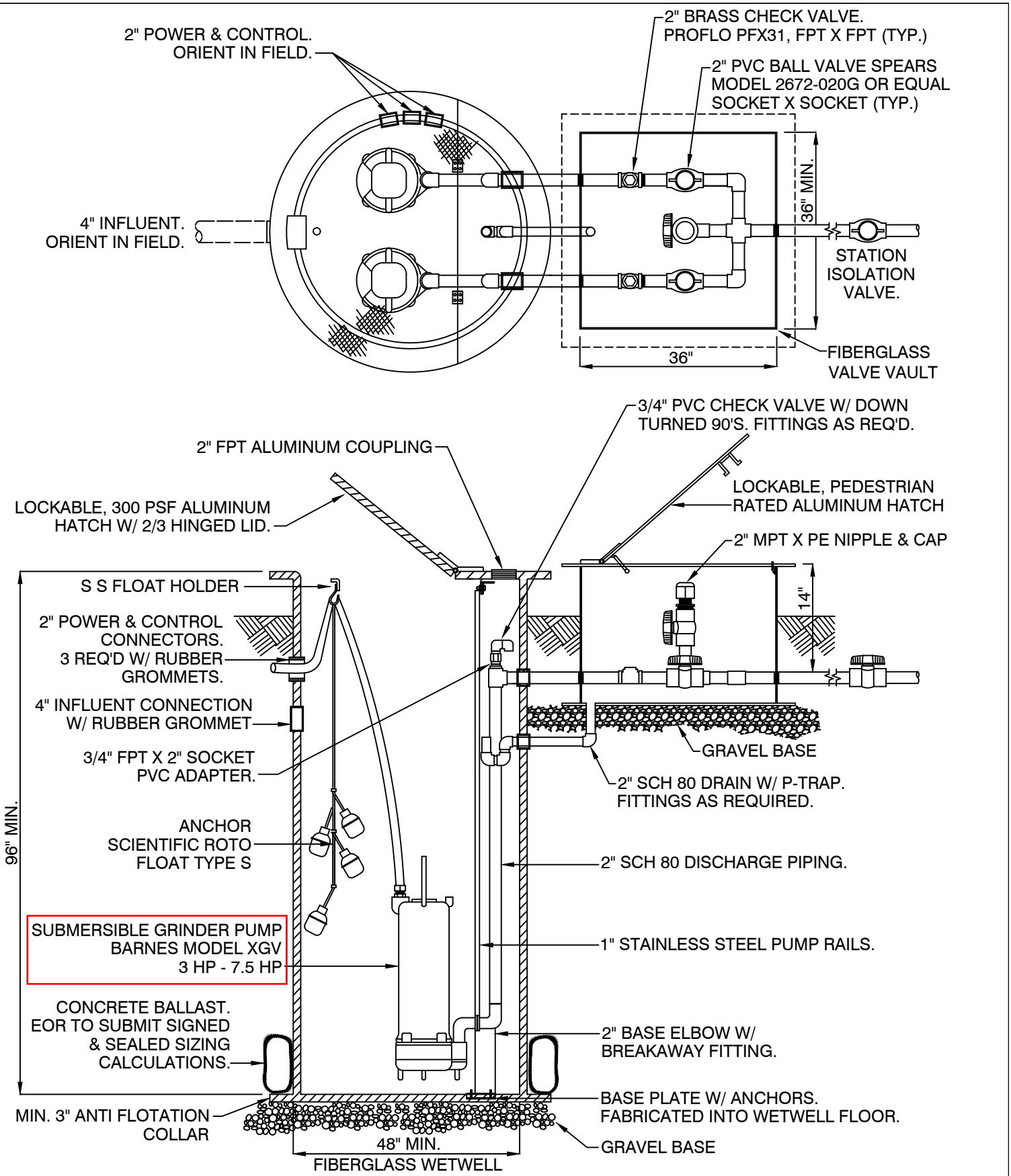
12V RELAY

LOXAHATCHEE RIVER DISTRICT

N.T.S.	EXISTING LIFT STATION BACKUP ALARM RETROFIT	COL-BBA
REVISION: JULY, 2022		

LOXAHATCHEE RIVER DISTRICT

REVISION:	LOW PRESSURE FORCE MAIN DETAILS INDEX	LP
REVISION: AUG, 2022		



LOXAHATCHEE RIVER DISTRICT

N.T.S.	COMMERCIAL DUPLEX TYPICAL WET WELL	LP-12
REVISION: JULY, 2022		

ITEM	DESCRIPTION	PART NO. SINGLE PHASE	PART NO. THREE PHASE	QTY
AC	ALARM CONTROLLER	MPE MODEL BOAC-001	MPE MODEL BOAC-001	1
AH	ALARM HORN	WHEELOCK AMT-12/24-R	WHEELOCK AMT-12/24-R	1
AL	ALARM LIGHT	CONDOR/GRAINGER 2ERP1	CONDOR/GRAINGER 2ERP1	1
ALT	ALTERNATOR	ATC DIVERSIFIED ELECTRONICS: ARB120AEA	ATC DIVERSIFIED ELECTRONICS: ARB120AEA	1
BAT	BATTERY	WERKER MODEL MWA12-7F	WERKER MODEL MWA12-7F	1
CR	CONTROL RELAY	IDEC: RR 2 BA - U L AC120V	IDEC: RR 2 BA - U L AC120V	5
ETM	ELAPSED TIME METER	CONTROL DYNAMICS: HMA303	CONTROL DYNAMICS: HMA303	2
ENC	ENCLOSURE NEMA 4X SS	HOFFMAN: CSD362410SS W/ DRIP SHIELD AND LOCKING HASP	HOFFMAN: CSD362410SS W/ DRIP SHIELD AND LOCKING HASP	1
FL	FLASHER	LIGHTS TO GO: AFDC 1	LIGHTS TO GO: AFDC 1	1
GR	GENERATOR RECEPTACLE	APPLETON: ADR1034RS	APPLETON: ADR1034RS	1
GFIB, CB	GFI & CONTROL BREAKER	SQUARE-D: QOU115	SQUARE-D: QOU115	2
⊘	HAND OFF AUTO SWITCH	SUARE-D: 9001KS46B	SUARE-D: 9001KS46B	2
ISB	INTRINSICALLY SAFE BARRIER	IDEC: EB3C-R05A	IDEC: EB3C-R05A	1
LA	LIGHTNING ARRESTOR	SQUARE-D: SDSA1175	SQUARE-D: SDSA3650	1
MB, EB	MAIN & EMERGENCY BREAKERS	SQUARE-D: QOU2***	SQUARE-D: QOU3***	2
TU	THERMAL UNIT	SQUARE-D: B36.0	SQUARE-D: B36.0	2
⊗	PILOT LIGHTS	BACO CONTROLS: NLD22* (COLOR AS INDICATED)	BACO CONTROLS: NLD22* (COLOR AS INDICATED)	6
PB***	PUMP BREAKERS	SQUARE-D: QOU2***	SQUARE-D: QOU3***	2
STRTR***	STARTER	SQUARE-D: 8536SCO2V02S	SQUARE-D: 8536SCO3V02S	2
SC	SURGE CAPACITOR	DELTA: CA302R	DELTA: CA603R	1
PB	TEST/RESET/SILENCE PUSH BUTTONS	SQUARE-D: 9001SKR1U	SQUARE-D: 9001SKR1U	1
VM	VOLTAGE MONITOR	ATC DIVERSIFIED ELECTRONICS: UOA240ALA	ATC DIVERSIFIED ELECTRONICS: SLA-***-***	1
RCPTL	15 AMP GFI RECEPTACLE	PASS AND SEYMOUR: 1595W	PASS AND SEYMOUR: 1595W	1
SC***	START CAPACITOR	***	NOT REQUIRED	2
RC***	RUN CAPACITOR	***	NOT REQUIRED	2

*** SIZED PER PUMP MANUFACTURER'S RECOMMENDATION

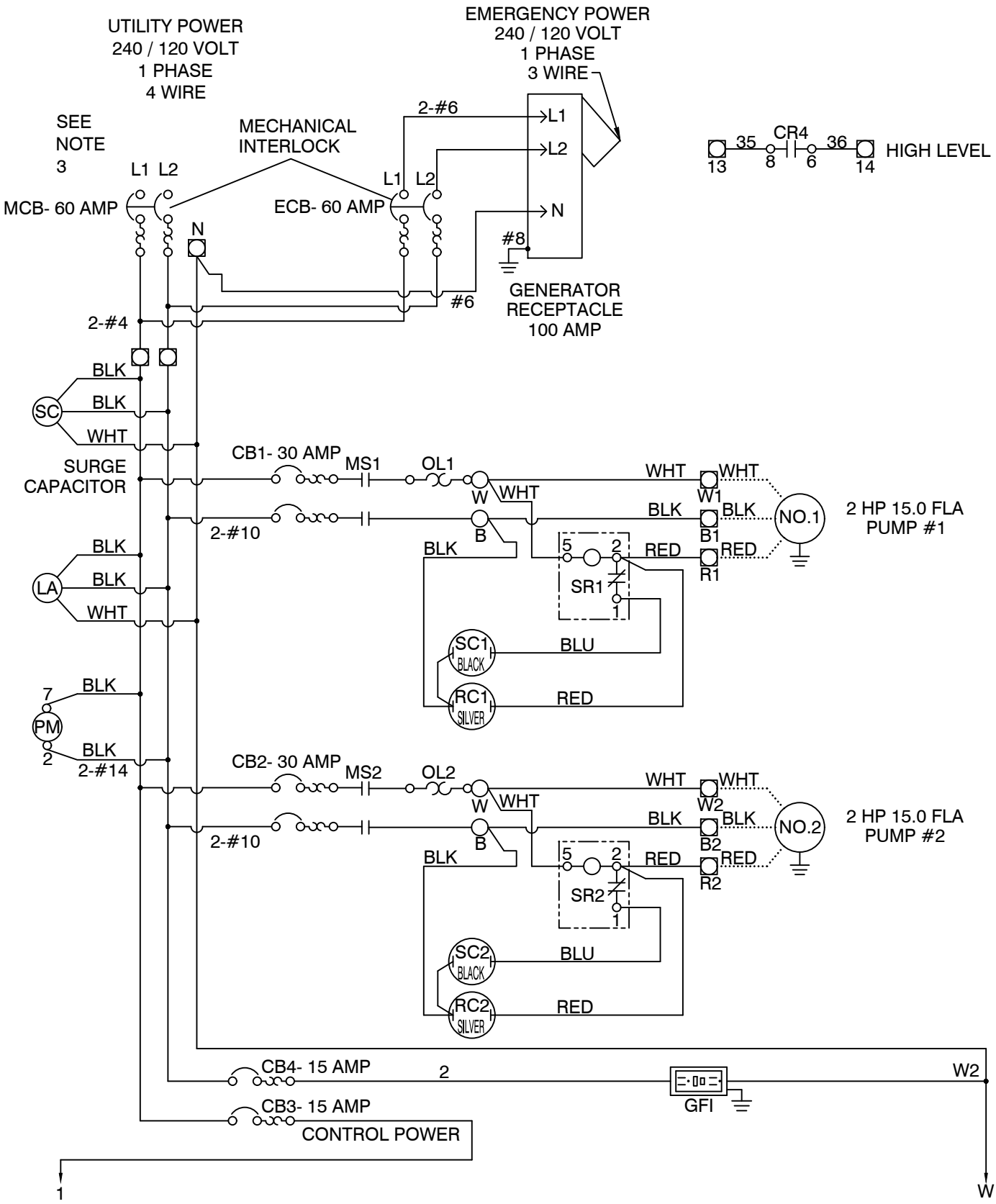
LOXAHATCHEE RIVER DISTRICT

N.T.S.

REVISION: AUG, 2022

COMMERCIAL DUPLEX CONTROL PANEL BILL OF MATERIALS

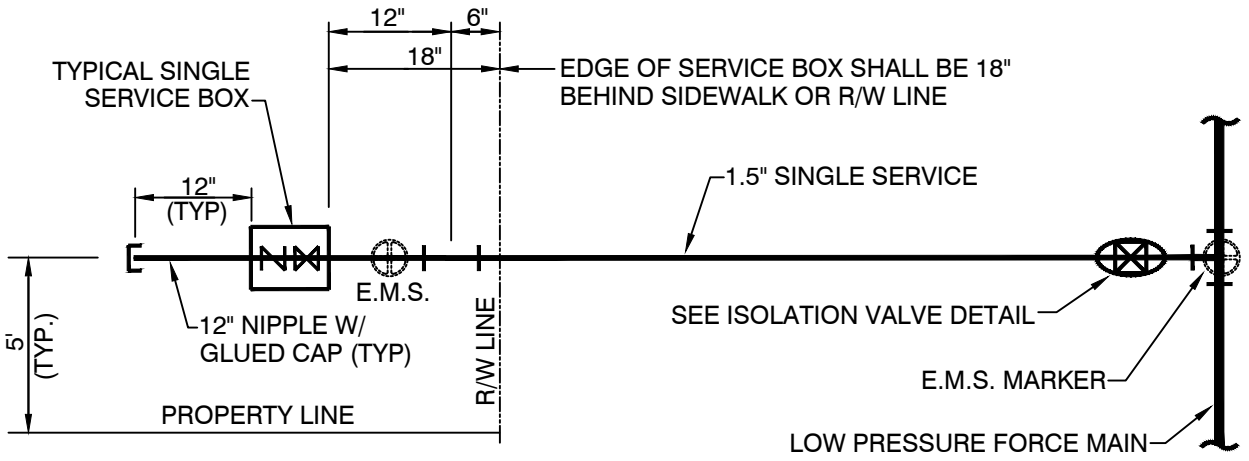
LP-16



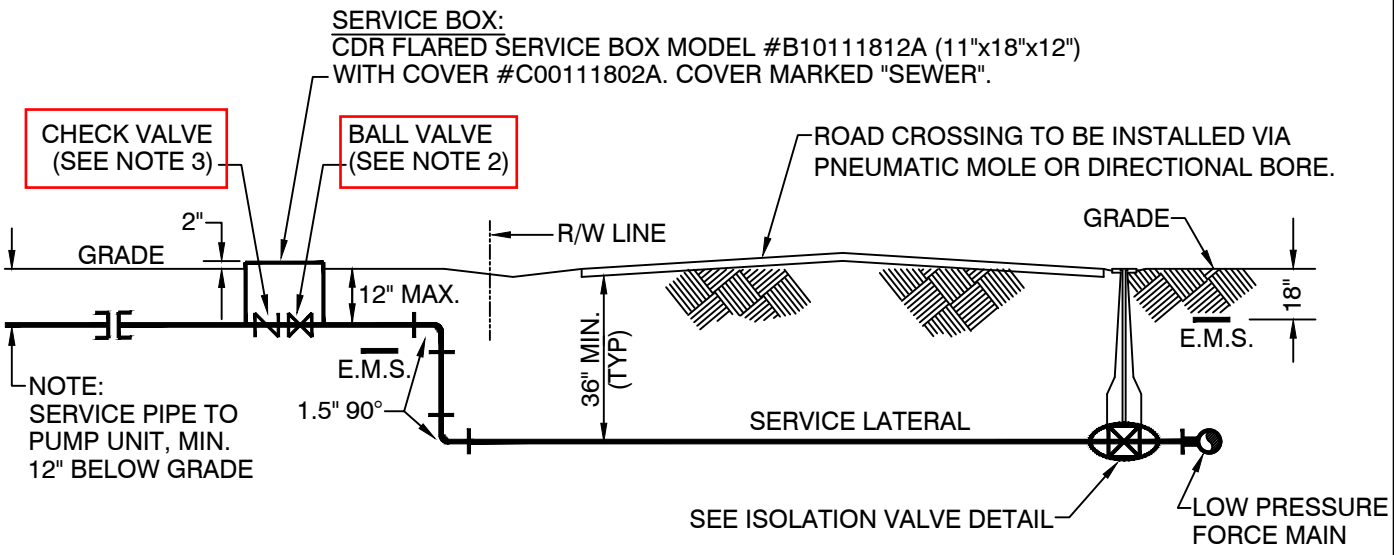
CONTINUED ON COMMERCIAL DUPLEX ELECTRICAL SCHEMATIC CONTROL CIRCUIT

LOXAHATCHEE RIVER DISTRICT

N.T.S.	COMMERCIAL DUPLEX - LOW FLOW ELECTRICAL SCHEMATIC 1PHASE	LP-17A
REVISION: FEB, 2022		



PLAN VIEW



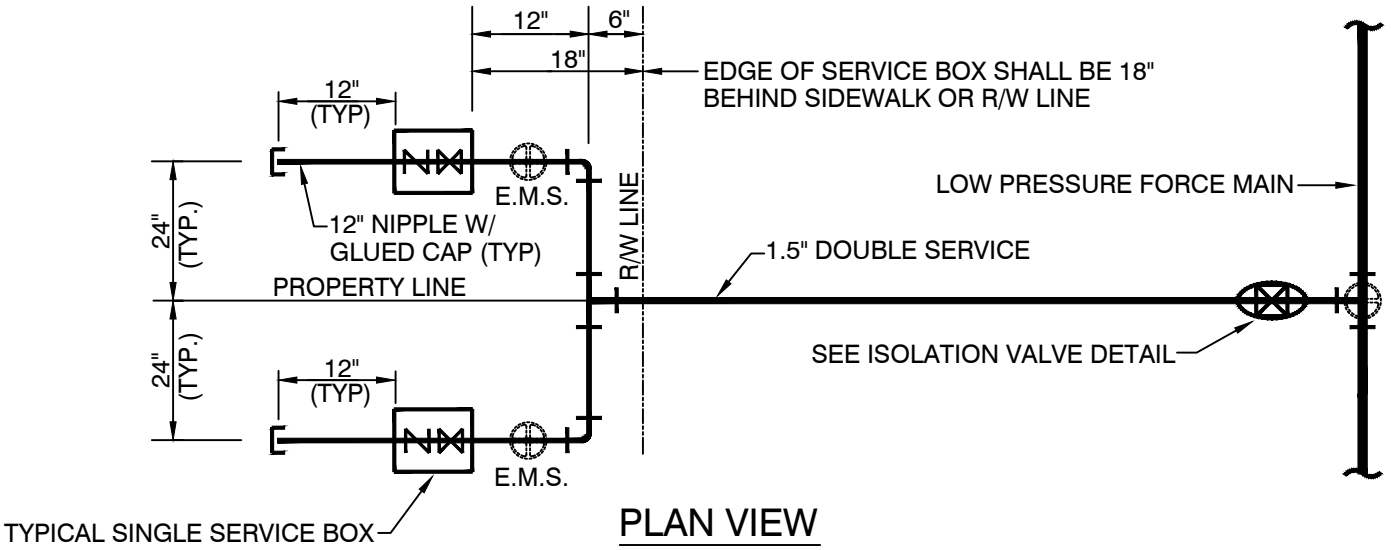
TYPICAL ROAD CROSSING SECTION VIEW

NOTES:

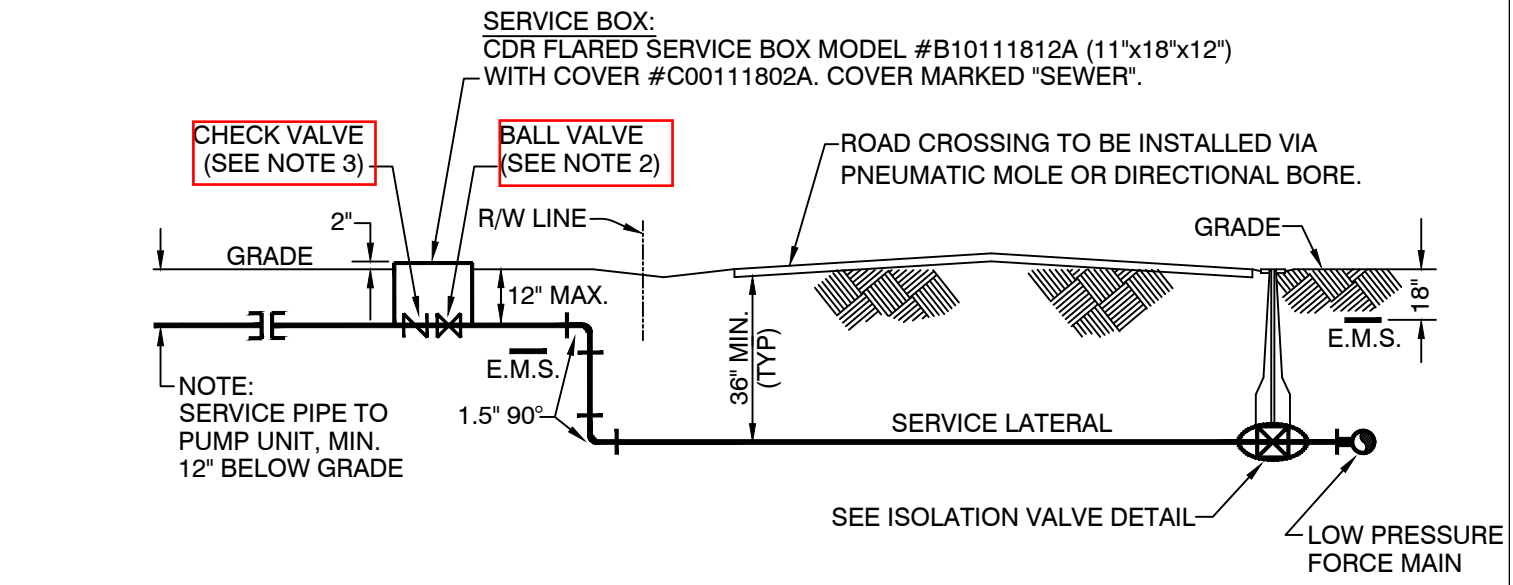
1. SERVICE LOCATIONS ON PLANS ARE APPROXIMATE. INSTALLED LOCATIONS TO BE COORDINATED WITH EXISTING ONSITE PLUMBING OR PROPOSED ONSITE CONSTRUCTION.
2. BALL VALVES SHALL BE FORD MODEL #B11-666M WITH 2" BRASS OPERATING NUT.
3. ALL CHECK VALVES SHALL BE PROFLO MODEL PFX31.
4. ALL PIPING IN AND 6-INCHES BEYOND THE SERVICE BOX SHALL BE SCH 80 PVC.
5. INSTALL MINIMUM 4" OF NO 57 WASHED STONE BENEATH ALL SERVICE BOXES AND VALVE BOXES AND AROUND ALL PIPE PENETRATIONS THROUGH SERVICE BOXES.
6. FOR HDPE TO PVC TRANSITIONS USE FORD PACK JOINT COUPLING PVC X PE W/ 304SS STIFFENER.

LOXAHATCHEE RIVER DISTRICT

N.T.S.	TYPICAL SINGLE SERVICE SCHEMATIC	LP-22
REVISION: AUG, 2022		



PLAN VIEW



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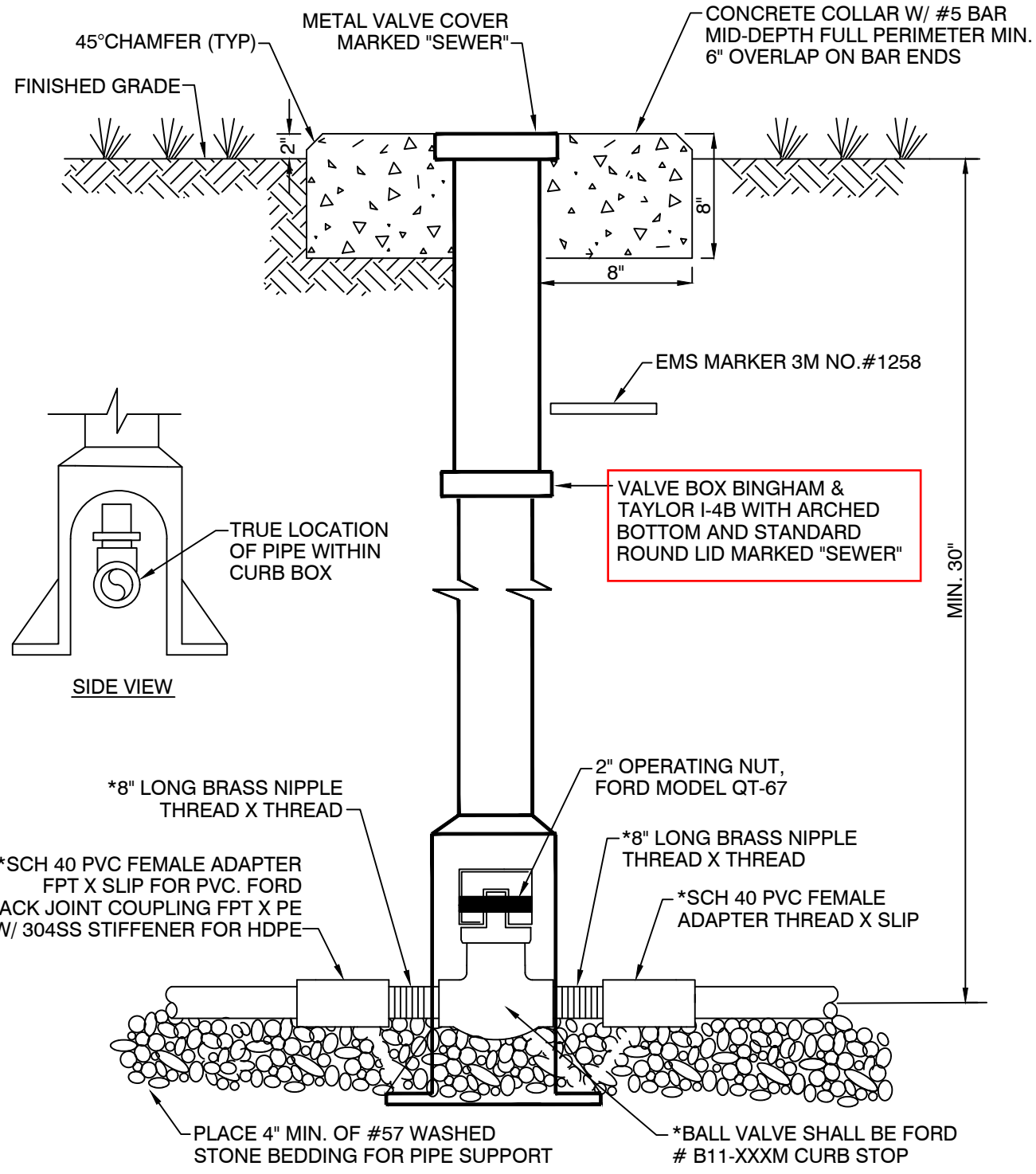
LOXAHATCHEE RIVER DISTRICT

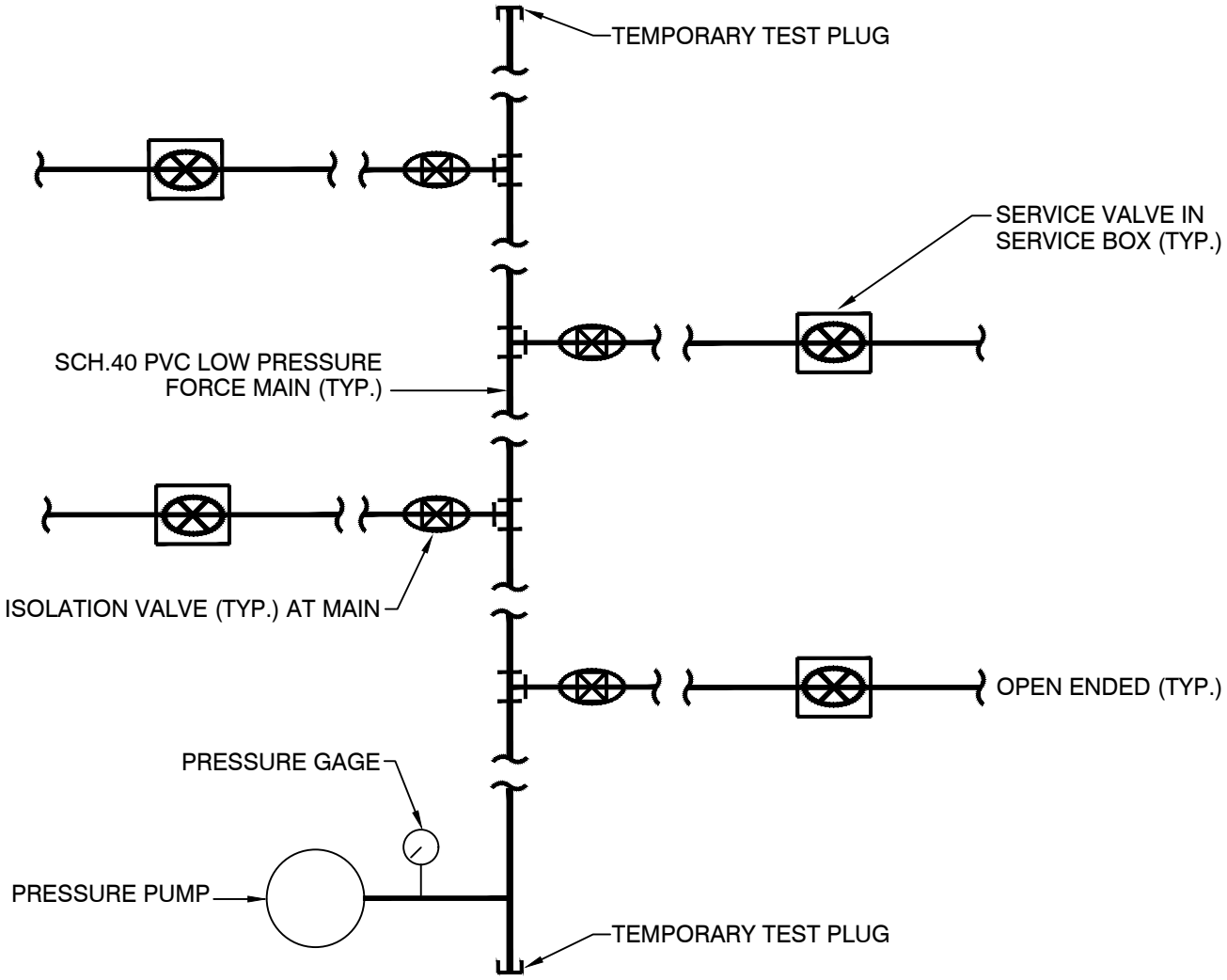
N.T.S.	TYPICAL DOUBLE SERVICE SCHEMATIC	LP-23
REVISION: AUG, 2022		



*SIZE BY ENGINEER

LOXAHATCHEE RIVER DISTRICT

N.T.S.	LOW PRESSURE VALVE DETAIL	LP-31
REVISION: JAN, 2022		



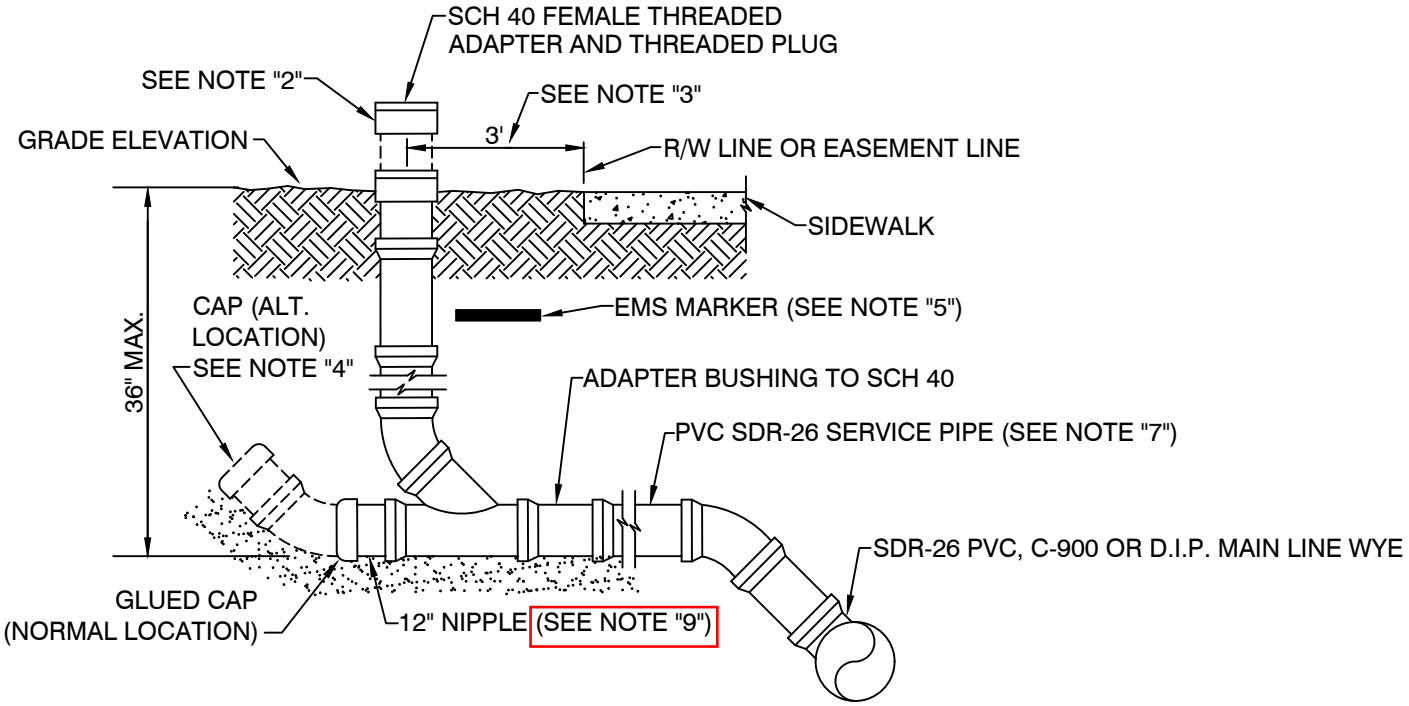
PLAN VIEW

NOTES:

1. CLOSE ALL SERVICE VALVES INSIDE SERVICE BOXES.
2. OPEN ALL ISOLATION VALVES AT MAIN.
3. PRESSURIZE SYSTEM & TEST TO 70 PSI FOR ONE (1) HOUR.
4. ONE AT A TIME, CLOSE ISOLATION VALVE @ MAIN AND BLEED OFF PRESSURE AT END CAP.
5. CHECK PRESSURE. PRESSURE SHOULD MAINTAIN 70 PSI
6. REPEAT STEP 4 AND 5 FOR EACH SERVICE CONNECTION.
7. SEE LOW PRESSURE DETAILS, LP-9 & LP-10 FOR TYPICAL LAYOUTS.

LOXAHATCHEE RIVER DISTRICT

N.T.S. REVISION: JUNE, 2022	TESTING PROCEDURE	LP-34



NOTES:

1. WHERE SEWER LATERALS MAY BE FORCED TO BE INSTALLED AT A DEPTH GREATER THAN 36" DUE TO CONFLICT WITH OTHER UTILITIES, THE WYE FITTING MAY BE PLACED IN A VERTICAL POSITION ON THE CLEAN-OUT RISER PIPE (ALTERNATE CONFIGURATION)

2. LEAVE RISER 18" (MIN.) ABOVE GRADE. WHEN HOUSE RISER CONNECTION IS MADE BY BUILDING PLUMBER, RISER PIPE WILL BE CUT OFF, AND SET 2" ABOVE SOD GRADE (ADAPTER SHALL BE LEFT UNGLUED).

3. IN AREAS WHERE NO SIDEWALK EXISTS OR WHERE NONE ARE PLANNED, THE CLEAN OUT RISER WILL BE SET AT R/W OR EASEMENT LINE.

4. IN AREAS WHERE GROUND WATER TABLE IS LESS THAN 36" FROM FINISHED GRADE, NIPPLES OUT OF WYE WILL BE EXTENDED UP TO A POINT 6" MIN. ABOVE GROUND WATER TABLE.

5. EMS MARKER MODEL NO.1258, SERVICE LINE ELECTRONIC MARKER AS MFG. BY 3M CO., TO REMAIN IN PLACE AFTER CONNECTION OF BUILDING SEWER. BURY IN FRONT OF CLEAN OUT RISER 18" BELOW FINISHED GRADE.

6. 6" SINGLE SERVICES USED ONLY FOR COMMERCIAL OR MULTI-FAMILY RESIDENTIAL UNITS. (SEE SD-3 & SD-4)

7. WHEN MAIN LINE IS C-900 PVC OR EPOXY COATED DIP, SERVICE PIPE SHALL BE SAME MATERIAL AS MAIN LINE.

8. WHEN APPROVED BY THE DISTRICT, CLEAN-OUTS MAY BE PLACED IN PAVED AREAS, HOWEVER, PROTECTIVE BOXES AS SHOWN ON DETAIL SD-1 MUST BE INSTALLED.

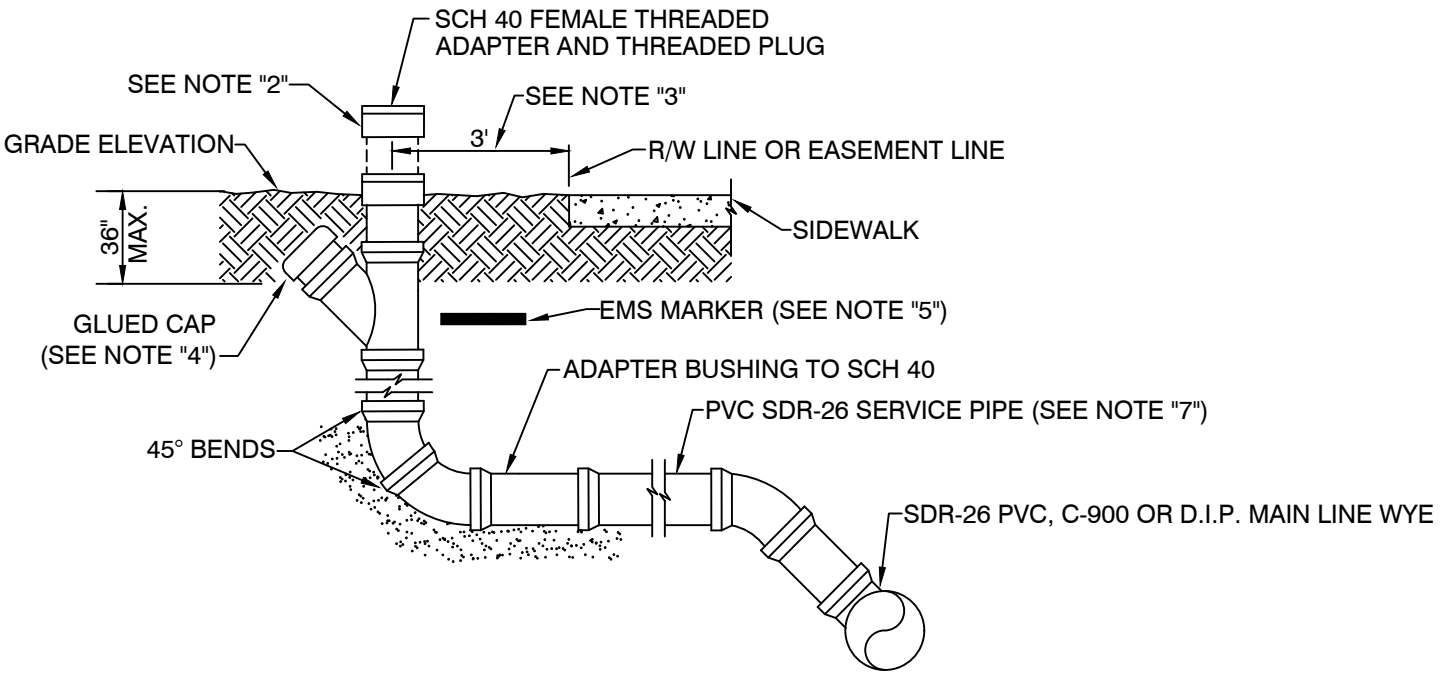
9. CUT AND CAP SHALL BE PERFORMED ON 12" NIPPLE NOT MORE THAN 12" FROM WYE.

(PLUMBERS ONLY)

WHERE EXISTING SERVICE LATERAL IS VITRIFIED CLAY PIPE, BELL (HUB) WILL BE REMOVED WITH APPROVED SAW AND A "FERNCO" VCP X PVC COUPLING WILL BE USED TO JOIN THE EXISTING AND NEW PIPE. FERNCO COUPLING WILL BE WRAPPED IN STRANDS OF COPPER WIRE AND COUPLING WILL BE BEDDED IN TYPE "57" ROCK. WHERE EXISTING SERVICE LATERAL IS DIP OR C-900, A DISTRICT APPROVED PVC TRANSITION COUPLING WILL BE USED.

LOXAHATCHEE RIVER DISTRICT

N.T.S.	4" OR 6" SINGLE SERVICE CONNECTION DETAIL	SD-6
REVISION: JUNE, 2022		



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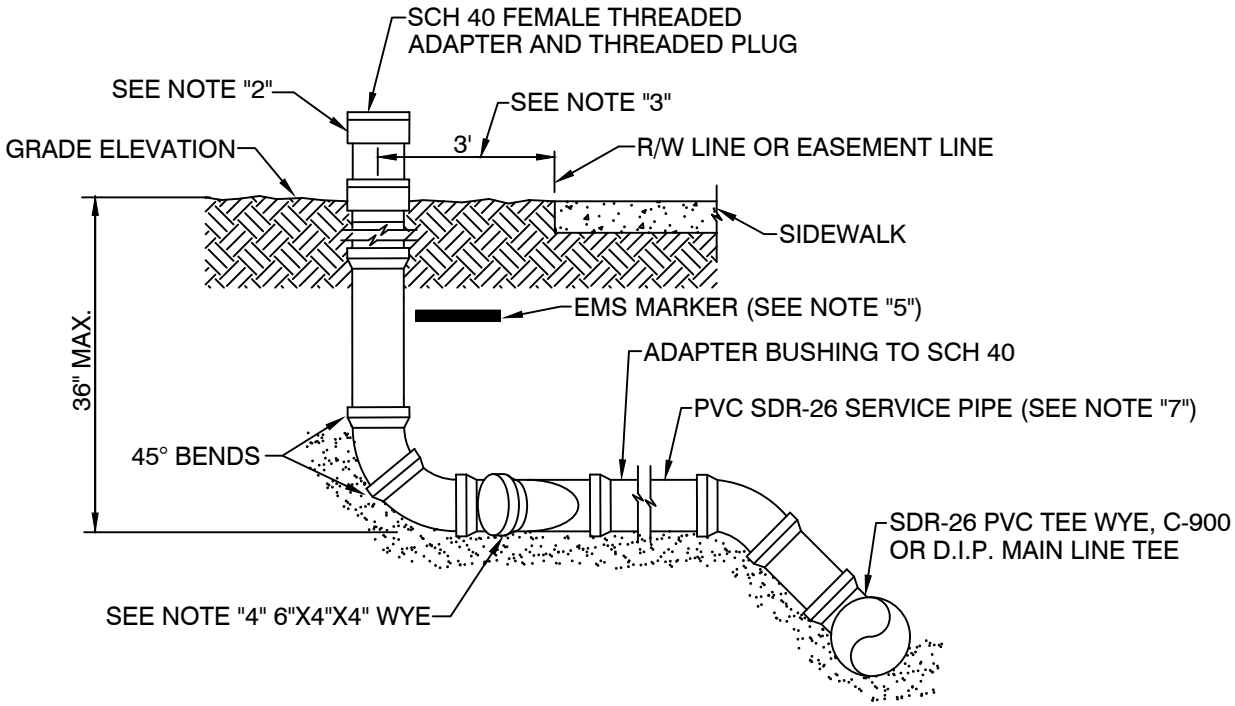
LOXAHATCHEE RIVER DISTRICT

N.T.S. REVISION: JUNE, 2022	4" OR 6" SINGLE SERVICE CONNECTION ALTERNATE CONFIGURATION DETAIL	SD-7



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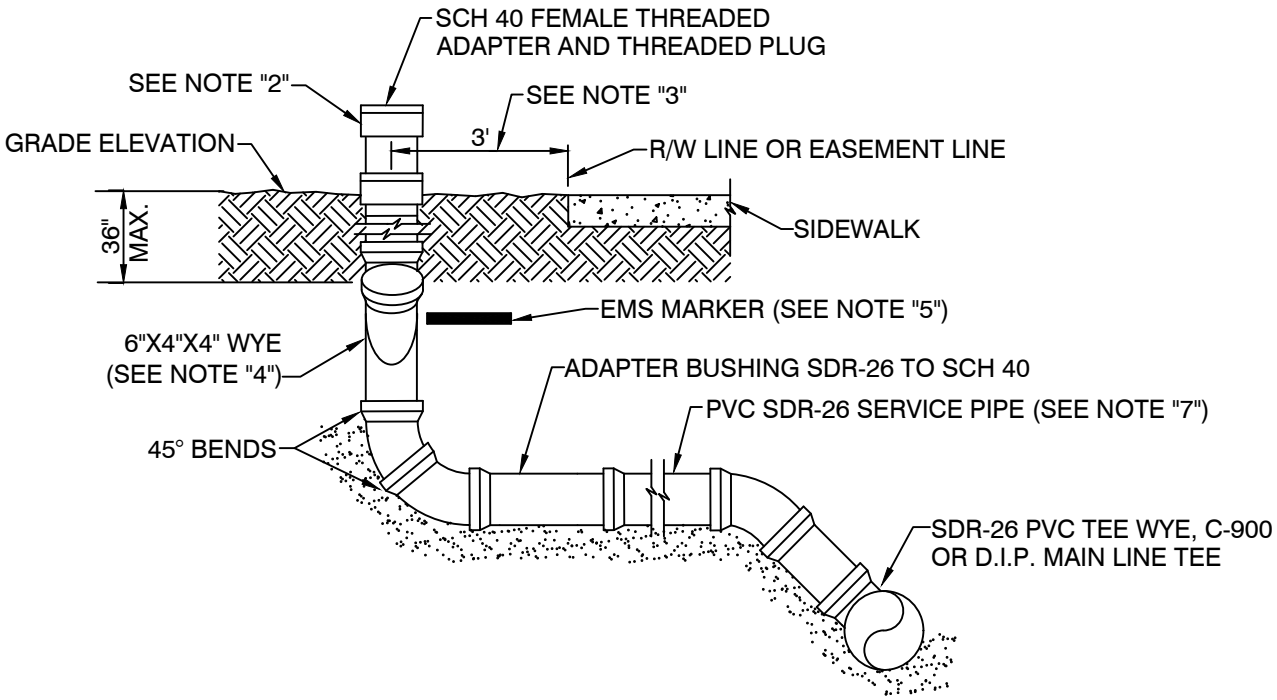
LOXAHATCHEE RIVER DISTRICT

N.T.S.	6" DOUBLE SERVICE CONNECTION DETAIL	SD-8
REVISION: JUNE, 2022		



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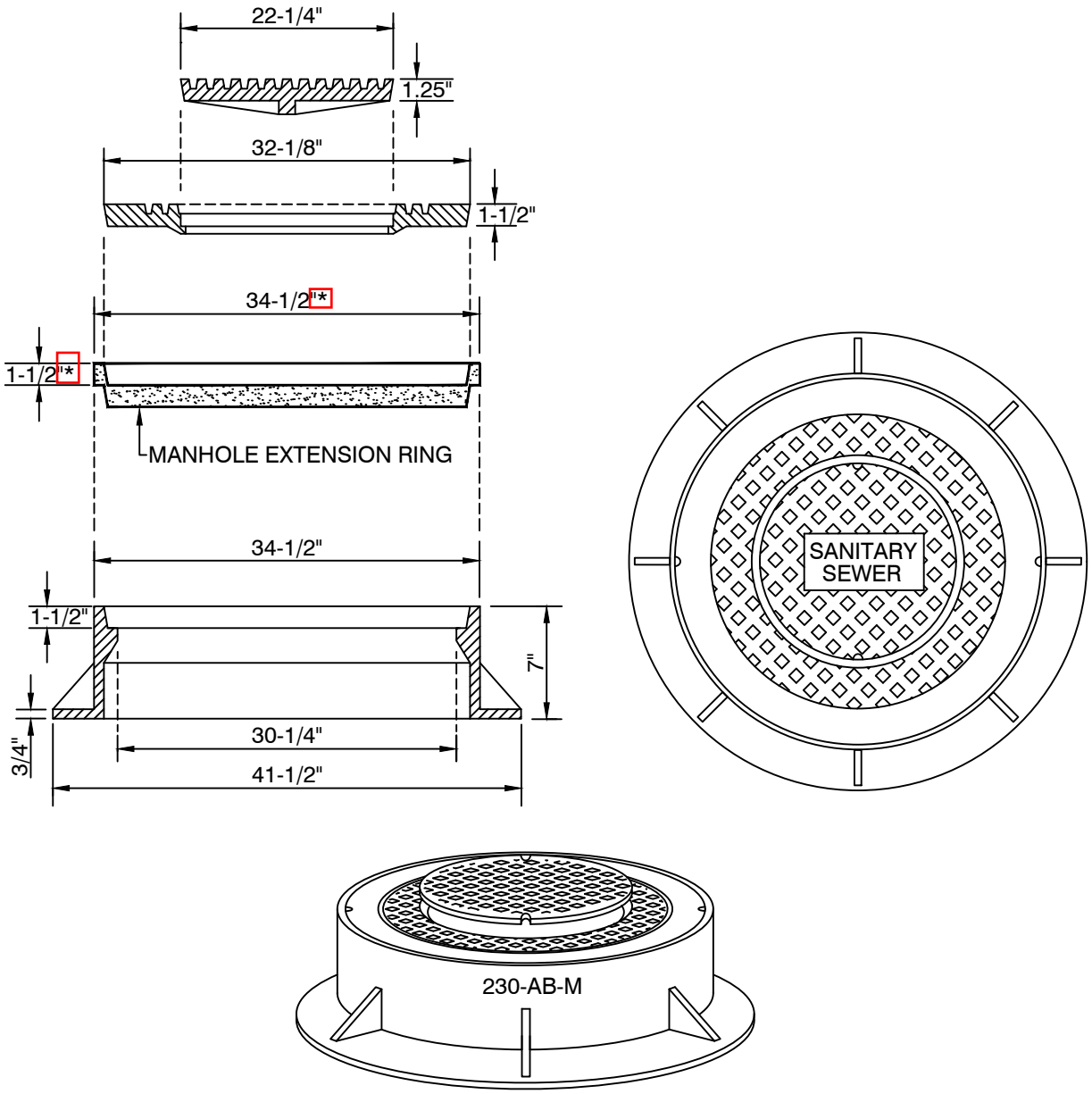
(PLUMBERS ONLY)

WHERE EXISTING SERVICE LATERAL IS VITRIFIED CLAY PIPE, BELL (HUB) WILL BE REMOVED WITH APPROVED SAW AND A "FERNCO" VCP X PVC COUPLING WILL BE USED TO JOIN THE EXISTING AND NEW PIPE. FERNCO COUPLING WILL BE WRAPPED IN STRANDS OF COPPER WIRE AND COUPLING WILL BE BEDDED IN TYPE "57" ROCK. WHERE EXISTING SERVICE LATERAL IS DIP OR C-900, A DISTRICT APPROVED PVC TRANSITION COUPLING WILL BE USED.

LOXAHATCHEE RIVER DISTRICT

N.T.S.	6" DOUBLE SERVICE CONNECTION ALTERNATE CONFIGURATION DETAIL	SD-9
REVISION: JUNE, 2022		



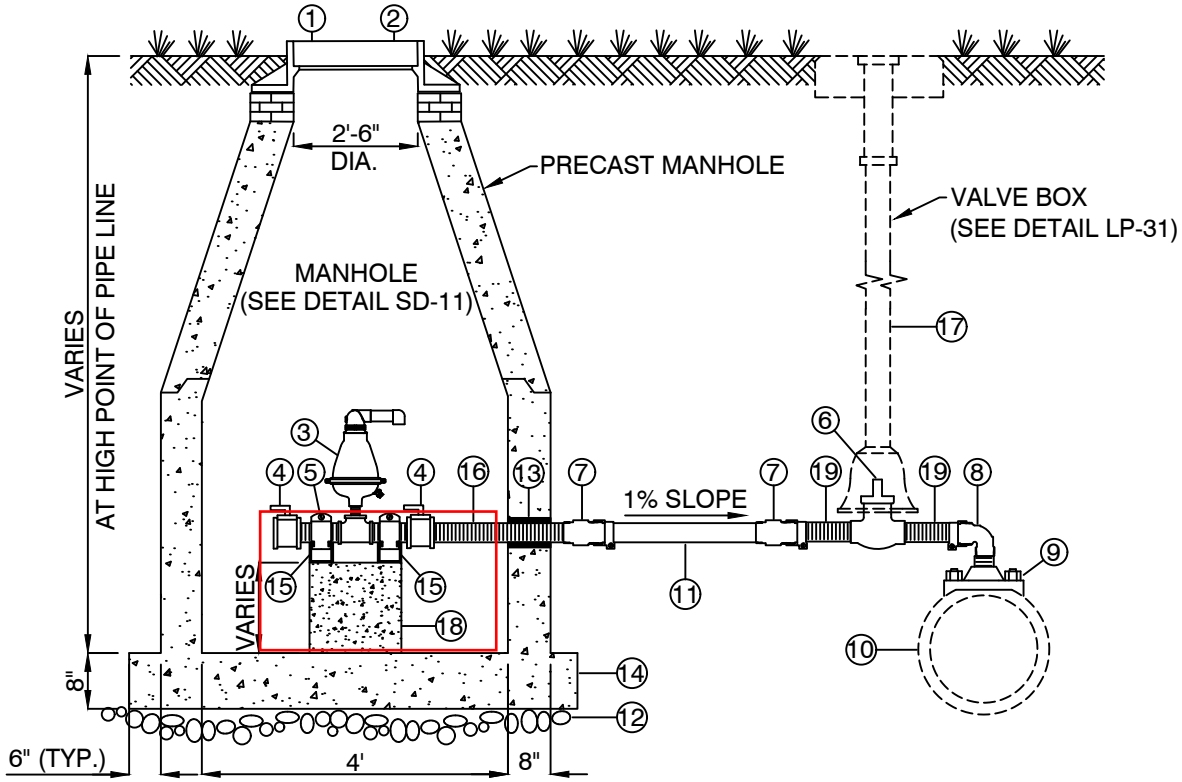
*DIMENSIONS TO BE FIELD VERIFIED BY CONTRACTOR PRIOR TO SHOP DRAWING REVIEW AND APPROVAL.

NOTES:

1. USE OF THIS DETAIL REQUIRES PRIOR APPROVAL FROM THE DIRECTOR OF ENGINEERING.
2. EXTENSION RINGS SHALL BE POLYPROPYLENE & FIBERGLASS. MANHOLE RINGS AS MANUFACTURED BY: "TURNER COMPANY".
3. ALL SURFACES SHALL BE CLEANED OF ALL DIRT, GREASE, OIL, RUST. METAL SURFACES SHALL BE WIRE BRUSHED.
4. APPLY 3M 4693 ADHESIVE (OR APPROVED EQUAL) TO ALL MATING SURFACES.

LOXAHATCHEE RIVER DISTRICT

N.T.S.	MANHOLE EXTENSION RING DETAIL	SD-14
REVISION: AUG, 2022		

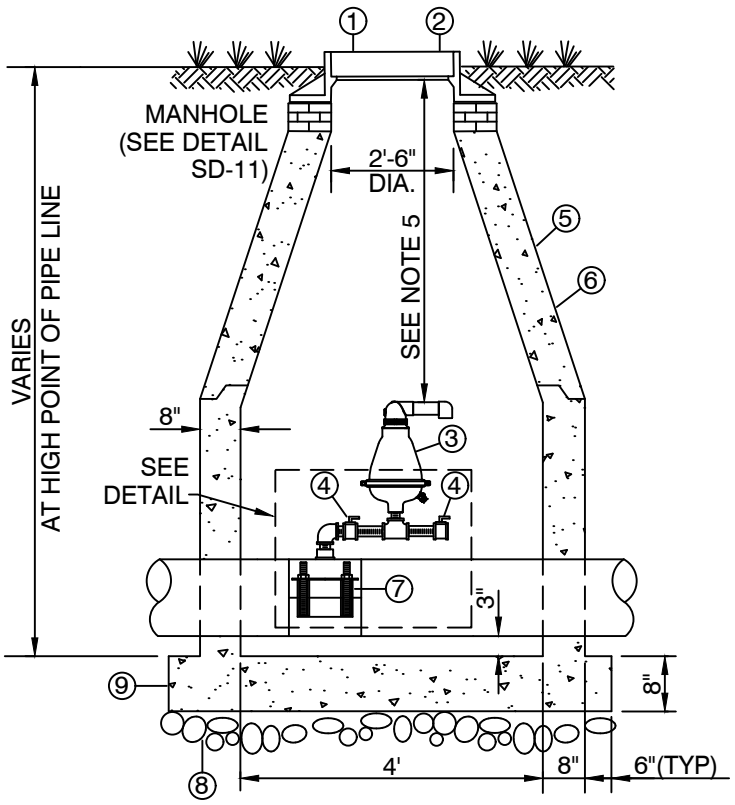


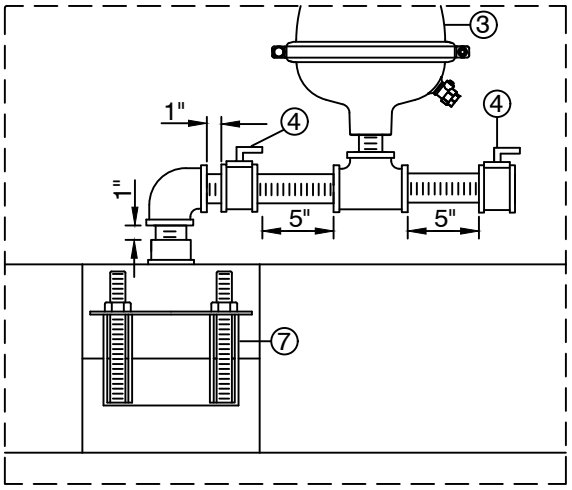
① - MH COVER TO BE PLACED 2" ABOVE FINISHED GRADE IN LANDSCAPE AREAS
② - FRAME AND DOUBLE COVER U.S. FOUNDRY #230-AB-M OR APPROVED EQUAL
③ - A.R.I. MODEL #D-025, SHORT VERSION COMBINATION AIR VALVE
④ - 2" 316 SS BALL VALVE, McMASTER - CARR, MODEL #46495K26 OR APPROVED EQUAL
⑤ - VALVE ASSEMBLY PIPE SHALL BE FASTENED W/ SS HARDWARE TO KEEP A.R.V. PLUMB
⑥ - 2" BALL VALVE SHALL BE FORD #B11777 CURB STOP OR APPROVED EQUAL
⑦ - PACK JOINT COUPLING (C87-XX-NL-STYLE) W/ SS STIFFENERS
⑧ - BRASS 90°
⑨ - 316 SS DOUBLE BOLT SERVICE SADDLE W/ 2" N.P.T. THREADED OUTLET. THE SERVICE SADDLE & HARDWARE SHALL ALL BE 316 SS
⑩ - FORCE MAIN OFFSET CONDITION
⑪ - 2" HDPE-SDR11 PIPING (MIN 1% SLOPE)
⑫ - MIN. 6" OF .75" GRAVEL UNDER ENTIRE BASE
⑬ - FERNCO WATER STOP
⑭ - MONOLITHIC BASE SECTION
⑮ - UNISTRUT TO BE ATTACHED W/ SS HARDWARE 2" EMBEDMENT
⑯ - SS NIPPLE TO BE MADE TO SIZE AND EXTEND THROUGH MANHOLE CONCRETE WALL
⑰ - VALVE BOX BINGHAM & TAYLOR I-4B WITH ARCHED BOTTOM AND STANDARD ROUND LID MARKED "SEWER"
⑱ - 3000 PSI CAST IN PLACE CONCRETE
⑲ - 8" BRASS NIPPLE

NOTES:
1. ALL MATERIAL, FITTINGS, VALVES, NIPPLES, AND HARDWARE TO BE MIN. 304 SS INSIDE MANHOLE.
2. VALVES SHALL HAVE ALL LOCKING MECHANISMS REMOVED, BE IN THE UPRIGHT POSITION, ACCESSIBLE AND OPERATIONAL VIA VALVE KEY FROM ABOVE.
3. CENTER ARV UNDER MANHOLE OPENING.
4. TOP OF AIR RELEASE VALVES SHALL BE NO LESS THAN 12" FROM INSIDE MANHOLE RIM ELEVATION AND NO GREATER THAN 24".
5. MANHOLE COVER SHALL BE MARKED "SEWER".

LOXAHATCHEE RIVER DISTRICT

N.T.S.	AUTOMATIC AIR RELEASE VALVE OFFSET FORCE MAIN CONDITION DETAIL	SD-23
REVISION: SEP, 2022		





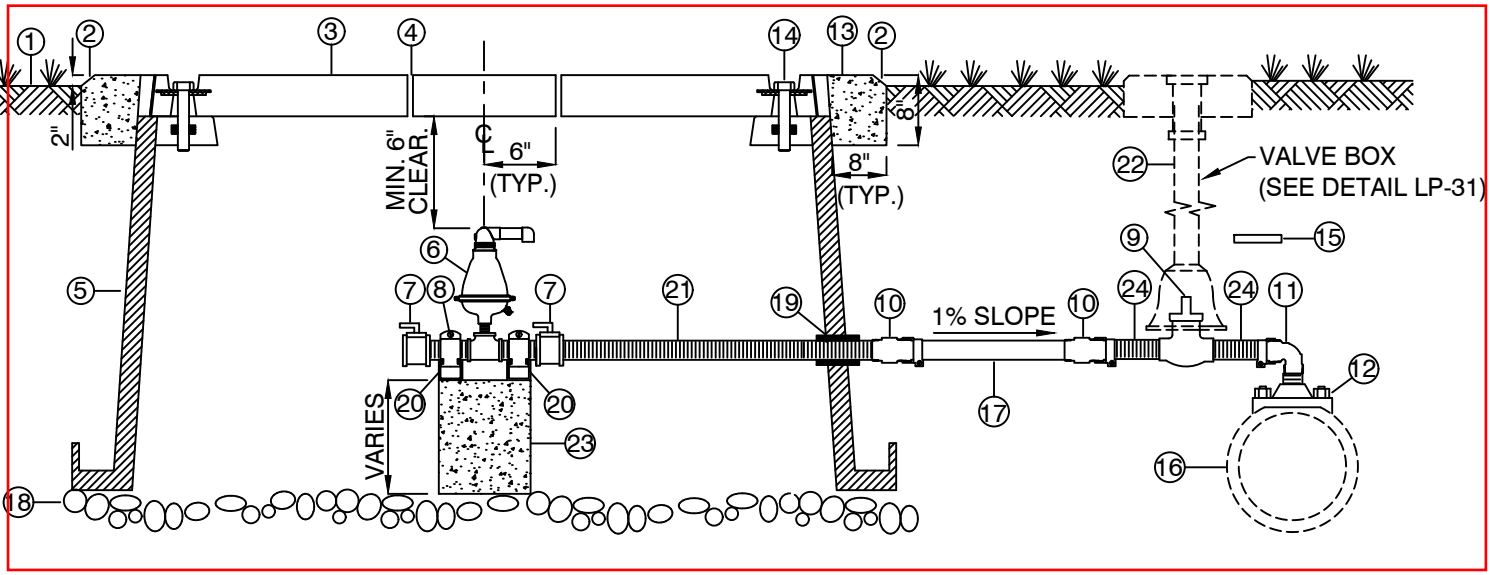
DETAIL

①- MH COVER TO BE PLACED 2" ABOVE FINISHED GRADE IN LANDSCAPE AREAS
②- FRAME AND DOUBLE COVER U.S. FOUNDRY #230-AB-M OR EQUAL
③- A.R.I. MODEL #D-025, SHORT VERSION COMBINATION AIR VALVE
④- 2" 316 SS BALL VALVE, McMASTER - CARR, MODEL #46495K26 OR APPROVED EQUAL
⑤- PRE CAST CONE SECTION
⑥- 4' DIA. PRE CAST M.H. SECTION PER A.S.T.M. C-478
⑦- 316 SS DOUBLE BOLT SERVICE SADDLE W/ 2" N.P.T. THREADED OUTLET. THE SERVICE SADDLE & HARDWARE SHALL ALL BE 316 SS
⑧- MIN. 6" OF .75" GRAVEL UNDER ENTIRE BASE
⑨- MONOLITHIC BASE SECTION

NOTES:
1. ALL MATERIAL, FITTINGS, VALVES, NIPPLES, AND HARDWARE TO BE MIN. 304 SS INSIDE MANHOLE.
2. VALVES SHALL HAVE ALL LOCKING MECHANISMS REMOVED, BE IN THE UPRIGHT POSITION, ACCESSIBLE AND OPERATIONAL VIA VALVE KEY FROM ABOVE.
3. CENTER ARV UNDER MANHOLE OPENING.
4. IN SITUATIONS WHERE A FORCE MAIN CROSSES A CANAL OR IS ATTACHED TO A BRIDGE, WHERE A STRUCTURE IS NOT NECESSARY, AN A.R.V TYPE A.R.I. MODEL #D-025 SHALL BE USED.
5. TOP OF AIR RELEASE VALVES SHALL BE NO LESS THAN 12" FROM INSIDE MANHOLE RIM ELEVATION AND NO GREATER THAN 24".
6. MANHOLE COVER SHALL BE MARKED "SEWER".

LOXAHATCHEE RIVER DISTRICT

N.T.S.	AUTOMATIC AIR RELEASE VALVE DETAIL	SD-24
REVISION: SEP, 2022		



① - FINISHED GRADE
② - 45° CHAMFER (TYP.)
③ - HUBBELL QUAZITE 30"X48" ARV BOX BOLT DOWN HEAVY DUTY COVER MODEL #C12304803A OR APPROVED EQUAL
④ - DRILL .25" VENT HOLE, 2 HOLES THRU TOP LID (TYP.)
⑤ - HUBBELL QUAZITE 30"X48"X18" ARV BOX MODEL #B12304818A OR APPROVED EQUAL
⑥ - A.R.I. MODEL #D-025, SHORT VERSION COMBINATION AIR VALVE
⑦ - 2" 316 SS BALL VALVE, McMASTER - CARR, MODEL #46495K26 OR APPROVED EQUAL
⑧ - VALVE ASSEMBLY PIPE SHALL BE FASTENED W/ SS HARDWARE TO KEEP A.R.V. PLUMB
⑨ - 2" BALL VALVE SHALL BE FORD #B11777 CURB STOP OR APPROVED EQUAL
⑩ - PACK JOINT COUPLING (C87-XX-NL-STYLE) W/ SS STIFFENERS
⑪ - BRASS 90°
⑫ - 316 SS DOUBLE BOLT SERVICE SADDLE W/ 2" N.P.T. THREADED OUTLET. THE SERVICE SADDLE & HARDWARE SHALL ALL BE 316 SS
⑬ - CONCRETE COLLAR W/ #5 BAR MID-DEPTH FULL PERIMETER. OVERLAP BAR ENDS MIN. 6 INCHES.
⑭ - BOLT DOWN COVER (MARKED "SEWER")
⑮ - EMS MARKER NO.#1258 ELECTRONIC MARKER SYSTEM AS MFG. BY 3M TEST AND MEASUREMENT SYSTEM AUSTIN, TEXAS (PLACED OVER TAP)
⑯ - FORCE MAIN OFFSET CONDITION
⑰ - 2" HDPE-SDR11 PIPING (MIN 1% SLOPE)
⑱ - MIN. 6" OF .75" ROCK UNDER ENTIRE BASE
⑲ - FERNCO WATER STOP
⑳ - UNISTRUT TO BE ATTACHED W/ SS HARDWARE 2" EMBEDMENT
㉑ - SS NIPPLE TO BE MADE TO SIZE AND EXTEND THROUGH MANHOLE CONCRETE WALL
㉒ - VALVE BOX BINGHAM & TAYLOR I-4B WITH ARCHED BOTTOM AND STANDARD ROUND LID MARKED "SEWER"
㉓ - 3000 PSI CAST IN PLACE CONCRETE
㉔ - 8" BRASS NIPPLE

NOTES:
1. THIS DETAIL TO BE USED ONLY WITH DISTRICT ENGINEER'S APPROVAL
2. ALL MATERIAL, FITTINGS, VALVES, NIPPLES, AND HARDWARE TO BE MIN. 304 SS INSIDE ARV BOX.
3. VALVES SHALL HAVE ALL LOCKING MECHANISMS REMOVED, BE IN THE UPRIGHT POSITION, ACCESSIBLE AND OPERATIONAL VIA VALVE KEY FROM ABOVE.
4. CENTER ARV UNDER ARV BOX OPENING.
5. TOP OF AIR RELEASE VALVES SHALL BE NO LESS THAN 12" FROM INSIDE ARV TOP ELEVATION AND NO GREATER THAN 24".
6. ARV COVER SHALL BE MARKED "SEWER".

LOXAHATCHEE RIVER DISTRICT

N.T.S.	TYPICAL FORCE MAIN AIR RELEASE VALVE DETAIL ALTERNATE OFFSET CONFIGURATION	SD-25
REVISION: SEP, 2022		

RECORD DRAWING SUBMITTAL GUIDE

1. TWO (2) SETS OF FULL SIZE PRINTS SHALL BE SUBMITTED TO THE DISTRICT FOR REVIEW 48 HOURS PRIOR TO REQUESTING INSPECTIONS SUCH AS, FINAL INSPECTION, PRESSURE TESTS, SANITARY SEWER LAMPING OR ANY OTHER ELEMENT OF THE SYSTEM WHICH IS DETERMINED BY THE DISTRICT TO REQUIRE CLARIFICATION.
2. THE DRAWINGS WILL BE REVIEWED BY THE DISTRICT FOR DEFICIENCIES. DEFICIENCIES WILL BE INDICATED ON ONE (1) SET OF PRINTS WHICH WILL BE RETURNED TO THE E.O.R. OR CONTRACTOR FOR NECESSARY CORRECTIVE ACTION.
3. UPON CORRECTION, TWO (2) SETS OF FULL SIZE PRINTS (SIGNED/SEALED BY A FLORIDA LICENSED SURVEYOR) SHALL BE SUBMITTED AND A GEOREFERENCED DESIGN AUTOCAD FILE (VERSION 2020 OR LATER).
4. NO DISCLAIMERS ON DRAWINGS WILL BE ACCEPTED.
5. UPON FINAL SUBMITTAL OF RECORD DRAWINGS, A GEOREFERENCED AUTOCAD FILE (VERSION 2020 OR LATER) AND AN ADOBE PDF 24"X36" FILE SHALL BE FURNISHED ON A CD/DVD DISK, THUMB DRIVE OR DOWNLOADABLE LINK EMAILED TO THE DISTRICT. ONLY (1) CAD FILE WITH ALL SHEETS OF RECORD DRAWINGS ALLOWED.

REQUIRED INFORMATION ON RECORD DRAWINGS

GENERAL:

1. DRAWINGS ON 24" X 36" BOND PAPER THAT WILL REPRODUCE LEGIBLY.
2. LABEL EACH PLAN SHEET "RECORD DRAWINGS" WITH DATE, COMPLETED TITLE BLOCK WITH CURRENT FILE NAME, SIGNED & SEALED BY A FLORIDA LICENSED PROFESSIONAL LAND SURVEYOR.
3. ALL SEWER ITEMS SHALL BE CATEGORIZED AND ASSIGNED TO THE DRAWING LAYERS SUCH AS: AB-MANHOLES, AB-FORCEMAIN, AB-VALVE, AB-GRAVITY MAIN, ETC.
4. REDRAW ALL SEWER LINES AND INFRASTRUCTURE ON RECORD DRAWINGS AS CONSTRUCTED HORIZONTALLY & VERTICALLY, BOLD, OR HEAVY LINE WORK & TEXT CALL OUTS TO STAND OUT FROM REST OF DRAWING. USING ORIGINAL DESIGN LINEWORK & ONLY UPDATING THE CORRESPONDING TEXT CALLOUTS WILL NOT BE ACCEPTED AS RECORD DRAWINGS.
5. ALL ITEMS LISTED BELOW MUST BE CORRECTLY GEOREFERENCED WITH NORTHINGS/EASTINGS CLEARLY SHOWNED. THE AS BUILTS SHALL BE GEOREFERENCED TO THE STATE PLANE COORDINATES IN NAD 83, FLORIDA EAST ZONE, WHILE THE VERTICAL DATUM SHALL BE NGVD 29.

GRAVITY SEWER:

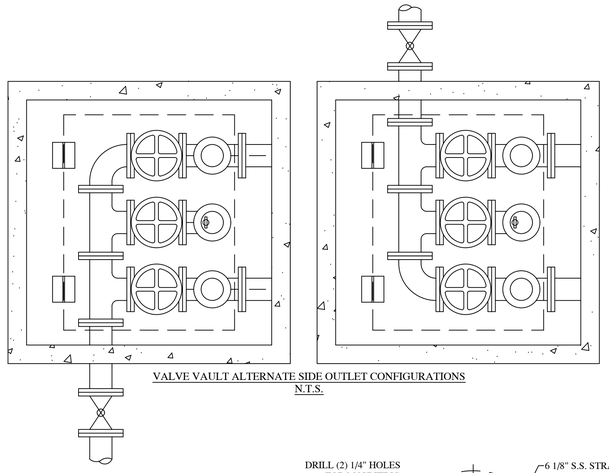
1. AS-BUILT DISTANCE OF GRAVITY MAIN FROM CENTER LINE OF ROAD OR EASEMENT RIGHT- OF-WAY LINE, BUILDINGS, OR AS DETERMINED BY THE LOXAHATCHEE RIVER DISTRICT. EXTENSIONS OF AN IMAGINARY LINE WILL NOT BE ACCEPTABLE AS REFERENCED POINTS.
2. TYPE OF MATERIALS INSTALLED - MAINS AND SERVICES.
3. SHOW EACH SEWER SERVICE LATERAL INCLUDING THE CONNECTION TO THE MAIN AND PROVIDE THE NORTHING & EASTING POINTS FOR EACH CLEANOUT & INDICATE CLEANOUT DIAMETER & INVERT ELEVATION.
4. AS-BUILT LOCATIONS OF MANHOLES WITH A NORTHING & EASTING PROVIDED.
5. AS-BUILT ELEVATIONS, RIM ELEVATION, EACH INVERT AND PIPE SLOPE.
6. UPDATE LIFT STATION DETAILS/ELEVATIONS INCLUDING START UP DATA.
7. LIFT STATION AND UTILITY EASEMENTS, INCLUDING LOCATION OF F.P.&L. SERVICE TO CONTROL PANEL.

PRESSURE PIPE:

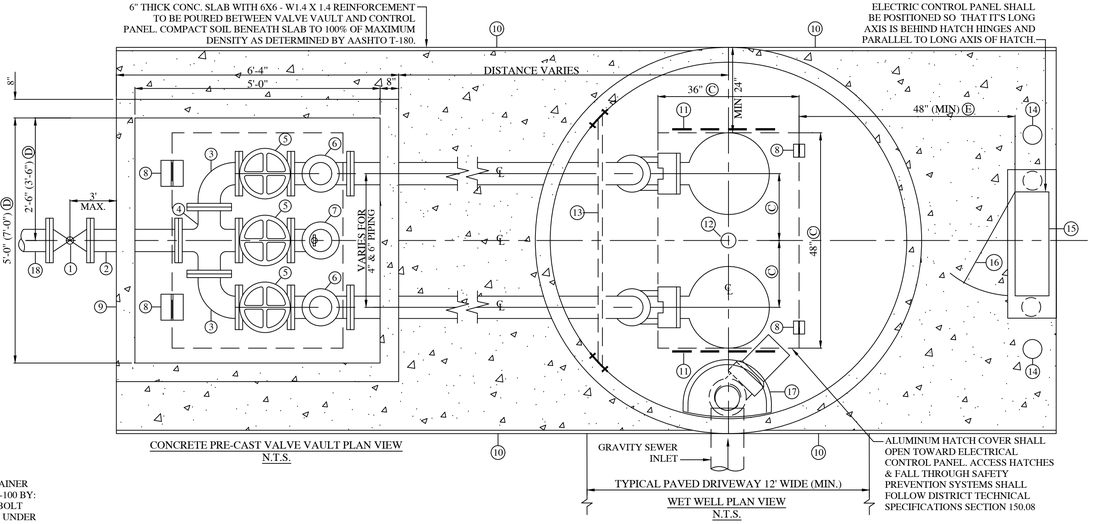
1. AS BUILT DISTANCE OF FORCE MAINS AT 100' INTERVALS FROM CENTER LINE OF ROAD, EASEMENT, RIGHT-OF-WAY LINE, BUILDINGS, SEWER MAINS OR AS DETERMINED BY THE LOXAHATCHEE RIVER DISTRICT. EXTENSIONS OF AN IMAGINARY LINE WILL NOT BE ACCEPTABLE AS REFERENCED POINTS.
2. SHOW ELEVATIONS, NORTHING/EASTING OF EACH VALVE, FITTING, AIR RELEASE VALVE, SERVICE LINE, TAP, ETC.
3. TYPE OF MATERIALS INSTALLED - PIPE AND APPURTENANCES. INDICATE ALL LOCATIONS OF CHANGE OF MATERIAL INCLUDING JOINT TYPE (M.J., SLIP, RESTRAINED).
4. VALVE TYPE (BUTTERFLY, GATE, PLUG) INCLUDING THE NORTHING & EASTING POINT.
5. AS BUILT LENGTH OF ALL JACK AND BORE CASINGS INDICATING DISTANCE FROM CENTER LINE OF PAVING TO EACH END OF CASING. THE AS BUILT INVERT ELEVATION OF EACH END OF CASING, (INCLUDING NORTHING/EASTING) AND AS BUILT DISTANCE FROM EACH END OF CASING TO LIMITS OF MECHANICAL JOINT PIPE IS ALSO REQUIRED.
6. AS BUILT ELEVATIONS AT 100' INTERVALS AS WELL AS ANY MAJOR CHANGES IN DIRECTION AND/OR ELEVATION. ELEVATIONS SHOWN AT THESE INTERVALS AND CHANGES MUST SHOW TOP OF PIPE ELEVATION, NORTHING/EASTING AND FINISHED GRADE ELEVATION AT THAT LOCATION. SHOW LOCATION OF EMS MARKERS.
7. UTILITY EASEMENTS SHALL BE CORRECTLY SHOWN AND DIMENSIONED WITH REFERENCED SEWER FACILITY.

LOXAHATCHEE RIVER DISTRICT

N.T.S.	RECORD DRAWING SUBMITTAL GUIDE	SD-29
REVISION: AUG, 2022		

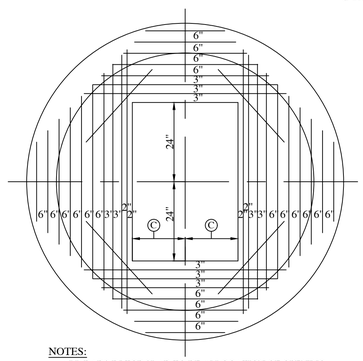


VALVE VAULT ALTERNATE SIDE OUTLET CONFIGURATIONS
N.T.S.



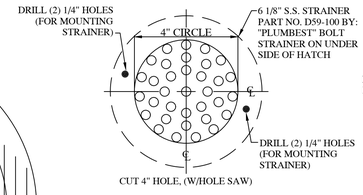
CONCRETE PRE-CAST VALVE VAULT PLAN VIEW
N.T.S.

WET WELL PLAN VIEW
N.T.S.

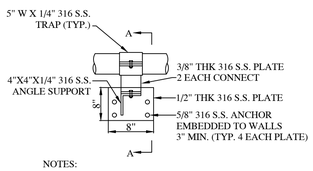


NOTES:
1. ALL BARS IN TOP SLAB TO BE #5 LOCATION OF OPENING IN TOP SLAB TO BE VERIFIED BY DESIGN ENGINEER WITH REQUIREMENT OF PUMP MANUFACTURER.

TOP SLAB DETAIL
N.T.S.



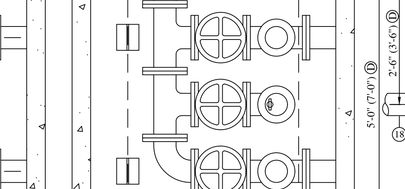
VENT HOLE DETAIL WET WELL HATCH
N.T.S.



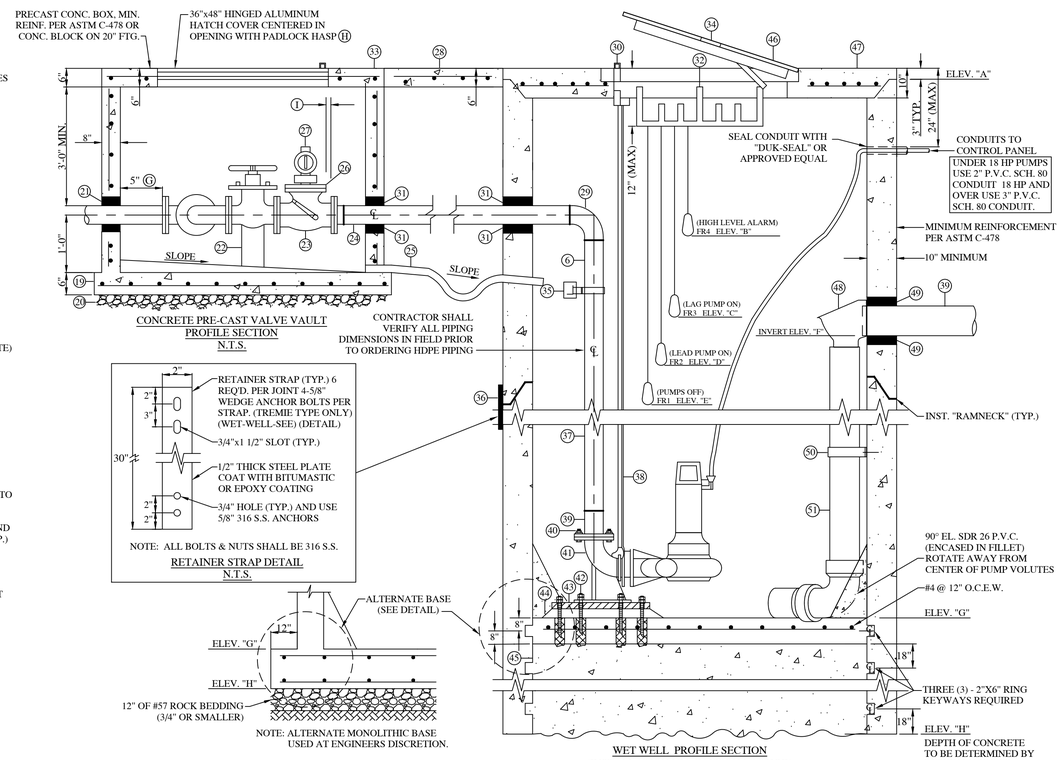
NOTES:
1. CONSTRUCT ALL WELDS IN ACCORDANCE WITH AWS D-1.6 STRUCTURAL WELDING CODE.
2. ALL NUTS & BOLTS SHALL BE 1/2" THICK S.S.

ANGLE PIPE SUPPORT DETAIL
N.T.S.

SECTION A-A
N.T.S.



PUMP BASEPLATE SECTION DETAIL
N.T.S.



CONCRETE PRE-CAST VALVE VAULT PROFILE SECTION
N.T.S.

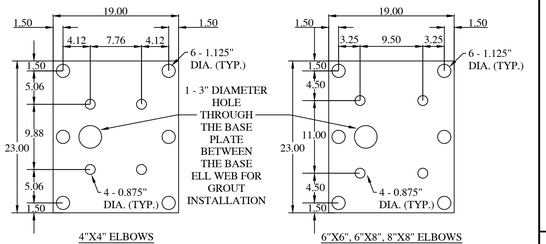
NOTE: ALL BOLTS & NUTS SHALL BE 316 S.S.

RETAINER STRAP DETAIL
N.T.S.

NOTE: ALTERNATE MONOLITHIC BASE USED AT ENGINEERS DISCRETION.

ALTERNATE MONOLITHIC BASE SECTION
N.T.S.

WET WELL PROFILE SECTION
(INSTALLATION VIA CAISSON METHOD)
N.T.S.



4"X4" ELBOWS
N.T.S.

6"X6", 6"X8", 8"X8" ELBOWS
N.T.S.

BASE PLATE: 316 STAINLESS STEEL 0.50" THICK
(ALL MEASUREMENTS IN INCHES)

ELEVATION SCHEDULE	
ELEV. "A"	
ELEV. "B"	
ELEV. "C"	
ELEC. "D"	
ELEV. "E"	
ELEV. "F"	
ELEV. "G"	
ELEV. "H"	
FLOOD ZONE /100 YR FLOOD ELEV.	

PUMP SELECTION	
PRESS. IN EXIST. F.M.	
SUCTION LIFT	
STATION LOSS	
FRICTION LOSS	
STATIC HEAD	
T.D.H. (FEET)	

PLAN & PROFILE NOTES:
- (A) - ALL DISCHARGE PIPING & VALVES SHALL BE ___ INCHES.
- (B) - ORIENTATION OF INFLUENT SEWER AND FORCE MAIN MAY BE DIFFERENT THAN SHOWN. SEE SITE PLAN FOR DETAILS.
- (C) - PER PUMP MANUFACTURER RECOMMENDATION.
- (D) - PROVIDE 36"x 54" OPENING WHEN 6" PIPE IS USED. VALVE VAULT WIDTH SHALL BE 7'-0" INSIDE DIMENSION.
- (E) - DISTANCE REQUIRED TO MAINTAIN CLEARANCE BETWEEN WET WELL HATCH DOOR AND CONTROL PANEL DOOR.
- (F) - PLUG VALVES SHALL BE MANUFACTURED BY DEZURIK OR MILLIKEN.
- (G) - WHEN 6" PIPING IS USED, HOLD THIS DIMENSION
- (H) - PROVIDE 36"X54" OPENING WHEN 6" PIPE IS USED. VALVE BOX WIDTH SHALL BE 7'-0" INSIDE DIMENSION.
- (I) - MAINTAIN CLEARANCE BETWEEN AUXILIARY PUMP CONNECTION AND EDGE OF HATCH.

PUMP DATA

MANUFACTURER: _____SEWAGE PUMP
MODEL: _____SERIES: _____
MOTORS: _____HP, _____VOLT, _____WIRE, 60 HZ.
PUMPS DELIVERING _____ (Design) G.P.M. AT _____ (Design) FT. T.D.H.
PUMPS DELIVERING _____ (As-built) G.P.M. AT _____ (As-built) FT. T.D.H.

1. M.J. PLUG VALVE WITH VALVE BOX (3 PIECE)
2. FLANGED X PLAIN END D.I.P.
3. 90° D.I. FLANGED ELBOW
4. D.I. FLANGED CROSS
5. FLANGED PLUG VALVE
6. FLANGED CHECK VALVE W/ OUTSIDE SPRING AND LEVER
7. AUXILIARY PUMP OUT
8. HINGE (TYP.)
9. PRE-CAST CONCRETE VALVE VAULT
10. 3/4" CHAMFER (TYP.)
11. FLOAT HANGER
12. VENT HOLE IN HATCH (SEE DETAIL BELOW)
13. 316 S.S. PIPE SUPPORT INSIDE WET WELL
14. 4" PVC SLEEVE FOR GROUND ROD (TYP.)
15. ELECTRICAL CONTROL PANEL (SEE DETAILS SD-32, SD-33 & SD34)
16. CONTROL PANEL DOOR
17. TYPE "A" DROP BOWL MFG. BY RELINER-DURAN INC. FABRICATED IN MARINE GRADE FIBERGLASS (ATTACH W/ 4 S.S. BOLTS)
18. FORCE MAIN CONNECTION
19. MONOLITHIC BASE & WALL SECTION W/#4 BAR 12" O.C.E.W. (TYP.)
20. 6" OF #57 ROCK BEDDING (3/4") OR SMALLER
21. GROUT OPENING
22. CONCRETE CRADLE SUPPORT UNDER OUTSIDE VALVES
23. FLANGED CHECK VALVE W/ OUTSIDESPRING AND LEVER
24. ____" HDPE SDR-11 MIN. FLANGED ADAPTER, BUTT FUSED WITH 316 S.S. BACKUP RING
25. 2" SCH 80 PVC DRAIN WITH TRAP
26. FLANGED CLOSE NIPPLE ADAPTER
27. ____"X2" FNPT COMPANION FLANGE AND 2" FxM NPT BUSHING AND 2" MxM NPT CORP STOP
28. MIN. 6" THICK CONC. SLAB WITH 6X6 - W1.4 X 1.4 REINFORCEMENT TO BE POURED BETWEEN WET-WELL AND VALVE VAULT. COMPACT SOIL BENEATH SLAB TO 100% OF MAXIMUM DENSITY AS DETERMINED BY AASHTO T-180.CON. SLAB TO BE LEVEL WITH WET WELL AND VALVE VAULT.
29. ____" HDPE SDR-11 MIN. BUTT FUSED 90° BEND
30. PROVIDE HASP FOR PADLOCK
31. CORE HOLE AND INSTALL NON- FERROUS WALL SLEEVE & ONE (1) LINK SEAL MODEL OS-316 OR APPROVED EQUAL PER OPENING, SIZED FOR HDPE OUTER DIAMETER
32. TWO (2) FLOAT HANGERS TO BE INSTALLED ON SHORT SIDES OF HATCH OPENING. HANGERS SHALL BE SUPPLIED BY PUMP MANUFACTURER
33. 6" CONCRETE SLAB 2-#4 TYP. 3-8 E.F. TOTAL 8 BARS
34. 4" DIAMETER VENT HOLE (SEE DETAIL)
35. 316 S.S. PIPE SUPPORT WITH NEOPRENE GASKET APPROXIMATELY 5' BELOW 90° ELBOW (SEE DETAIL)
36. RETAINER STRAP (SEE DETAIL)
37. ____" HDPE, SDR-11 MIN. PIPING, TO CHECK VALVE IN VALVE VAULT
38. 304 S.S. RAILS. PROVIDE INTERMEDIATE SUPPORTS IF RAILS ARE OVER 20 FT. LONG
39. ____" PVC____
40. 316 STAINLESS STEEL (TYP.) BOLTS, NUTS & WASHERS
41. DISCHARGE CONNECTION
42. ANCHOR BOLTS PER PUMP MFGR. RECOMMENDATION
43. BASE PLATE (SEE DETAIL)
44. FILLET AROUND BASE CIRCUMFERENCE
45. 4000 PSI STRUCTURAL REINFORCED CONCRETE FLOOR SLAB
46. 36"X48" ****MINIMUM ALUMINUM HATCH COVER. ACCESS HATCHES & FALL THROUGH SAFETY PREVENTION SYSTEMS SHALL FOLLOW DISTRICT TECHNICAL SPECIFICATIONS SECTION 150.08
47. 6"x8" REINFORCED CONCRETE COLLAR W/1 #5 BAR CONTINUOUS
48. TYPE "A" DROP BOWL MFG. BY RELINER-DURAN INC. FABRICATED IN MARINE GRADE FIBERGLASS (ATTACH W/4 S.S. BLOTS)
49. CORE HOLE AND SEAL ANNULUS WITH PORTLAND TYPE II CEMENT AND FIRE CURED CLAY BRICK
50. 2" S.S. STRAP WITH 1/2" Ø S.S. ANCHORS
51. ____" P.V.C. PIPE S.D.R. 26 (LENGTH AS REQUIRED)

RESERVED FOR SITE PLAN

GENERAL SPECIFICATIONS:

IT IS THE INTENT OF THIS STANDARD TO SPECIFY A TWO PUMP SUB- MERSIBLE LIFT STATION COMPLETE IN EVERY RESPECT WHETHER OR NOT COVERED BY SPECIFICATION OR THESE CONSTRUCTION DETAILS.

THE SURFACE OF THE LIFT STATION AND PAVED ACCESS ROADWAY SHALL BE SET AT PROPER ELEVATIONS SO THAT FUTURE ACCESS TO THE STATION WILL NOT BE IMPAIRED BY FLOODING, EXCESSIVE ROAD GRADES, SWALES, WALLS OR LANDSCAPING IN ANY MANNER. A SITE PLAN OF THE LIFT STATION SIZE (PLOT PLAN) INDICATING ALL TOPOGRAPHICAL FEATURES, RIGHT-OF-WAYS AND EASEMENTS SHALL BE SUBMITTED TO THE DISTRICT FOR APPROVAL OF THE SITE AND ADJOIN- ING CONTIGUOUS AREAS.

THE WETWELL DRIVEWAY IS INCLUDED WITH THE JOB, IT WILL BE CONSTRUCTED PER LOCAL CODE REQUIREMENTS.

THE CONTRACTOR SHALL COORDINATE WITH AND PAY ALL FEES, DEPOSITS, AND SERVICE COSTS TO FLORIDA POWER AND LIGHT CORP., TO BRING THREE (3) PHASE, FOUR (4) WIRE 230/120 VOLT (480 VOLTS WHEN REQUIRED) UNDERGROUND POWER SERVICE TO THE LIFT STATION SITE. THIS REQUIREMENT DOES NOT APPLY TO PROJECTS INVOLVING LIFT STATION REHABILITATION WORK PERFORMED BY THE DISTRICT.

THE LIFT STATION AND APPURTENANCES SHALL INCLUDE ALL COUPLINGS, ANCHOR BOLTS, PIPING, VALVES, ELECTRICAL EQUIPMENT, ETC., REQUIRED FOR A COMPLETE WORKING INSTALLATION.

A LIST OF EQUIPMENT INCLUDED UNDER THIS ITEM IS GIVEN BELOW. THIS LIST IS NOT ALL INCLUSIVE AND THE CONTRACTOR SHALL SUPPLY ALL OTHER EQUIPMENT NECESSARY FOR COMPLETE WORKING INSTALL- ATIONS. THE LIFT STATION SHALL INCLUDE:

TWO (2) SUBMERSIBLE TYPE SEWAGE PUMPS WITH 304 STAINLESS STEEL GUIDE RAILS AND ALL ACCESSORIES.

TWO (2) DISCHARGE LINES WITH SWING CHECK VALVES, DEZURIK PLUG VALVES INSTALLED WITHIN A PRE-CAST CONCRETE PIT. (SEE STANDARD DETAIL THIS SHEET)

ONE (1) PUMP LEVEL CONTROL SYSTEM FOR PUMP LEAD/LAG CONTROLS WITH HIGH LEVEL ALARM, ELECTRICAL PANEL, ETC. (SEE DETAILS SD-32, SD-33 & SD-34)

ONE (1) WET-WELL STRUCTURE WITH ACCESS HATCH PER DISTRICT STANDARD SPECIFICATIONS SECTION 150.08.

ONE (1) PRE-CAST VALVE VAULT STRUCTURE.

NOTES:
1. EACH BASE ELBOW SHALL BE SECURED TO THE BOTTOM OF THE WET WELL WITH FOUR (4) 3/4" DIAMETER 316 S.S. THREADED RODS, 316 S.S. SELF LOCKING NUTS, AND 316 S.S. PLATE. THE PLATE SHALL BE SECURED WITH SIX (6) 1" DIAMETER 316 S.S. THREADED RODS. THE THREADED RODS SHALL BE EMBEDDED A MINIMUM OF 6" INTO THE CONCRETE AND THE MAXIMUM TIGHTENING TORQUE APPLIED IS 110 FT. LBS.
2. ANCHOR STUD HEIGHTS ABOVE THE GROUT RAMP SHOULD ALLOW FOR PLATE AND BASE ELBOW THICKNESS, WASHERS, DOUBLE SELF-LOCKING NUTS WITH VERY LITTLE EXTRA HEIGHT (I.E., 0.25: OR LESS).
3. EACH ANCHORING ROD SHALL HAVE TWO (2) SELF-LOCKING NUTS, AND A SINGLE WASHER. EACH PUMP BASE ELBOW SHALL UTILIZE 2"x2"x1/4" 316 SS FABRICATED WASHERS.
4. CONTRACTOR SHALL USE A QUICK SET, HIGH STRENGTH, NON-SHRINKING GROUT TO CREATE 2-INCH (MINIMUM) LIFT OFF OF EXISTING FLOOR (7000 PSI @ 24 HOURS). CONTRACTOR SHALL ENSURE EXISTING FLOOR IS CLEANED AND PREPARED TO MAXIMIZE BONDING OF GROUT. DRY PACKING NOT ALLOWED.
5. ALTERNATE BASE ELL STUDS. CONTRACTOR MAY PROVIDE (4) - 3/4" 316 SS THREADED RODS INSTALLED THROUGH 0.875" DIAMETER HOLES AND WELDED TO THE BOTTOM OF THE BASE PLATE TO ANCHOR THE BASE ELLS TO THE BASE PLATES.

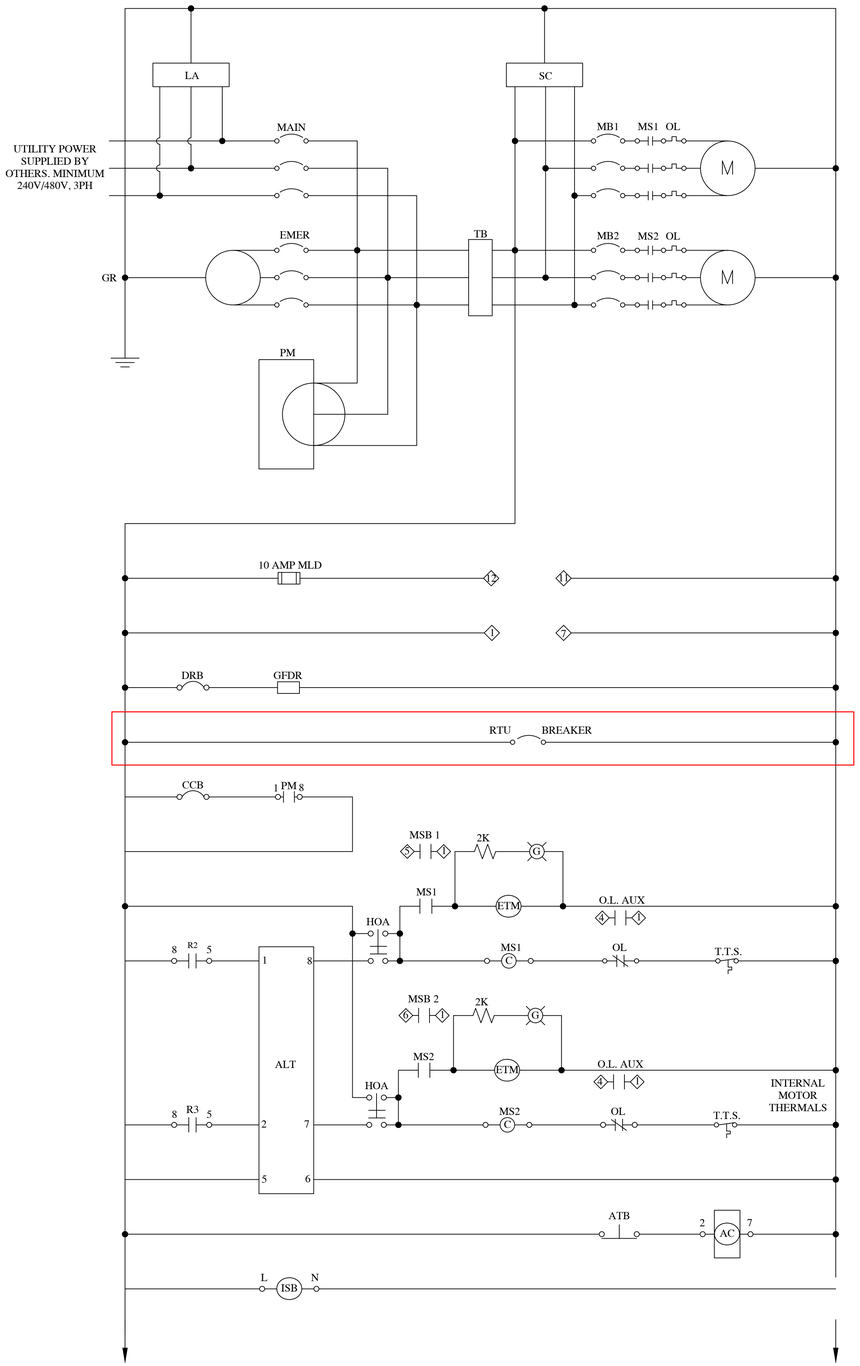
Rev.	Description

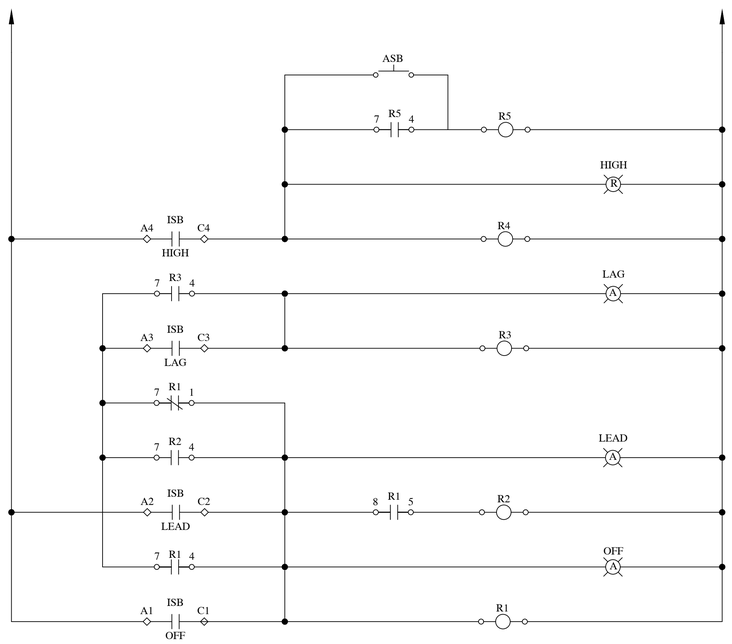
LOXAHATCHEE RIVER ENVIRONMENTAL CONTROL DISTRICT
2500 JUPITER PARK DRIVE
JUPITER, FL 33458-8964
(561) 747-5700 MAIN
(561) 747-9929 FAX
www.loxahatcheeriver.org

LIFT STATION STRUCTURAL & MECHANICAL STANDARD DETAILS

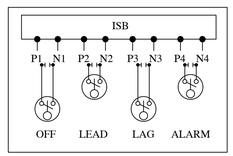
Drawn:	JD
Checked:	KD
Proj. Eng.	CM
Scale:	NTS
Date:	8/29/2022

SD-31

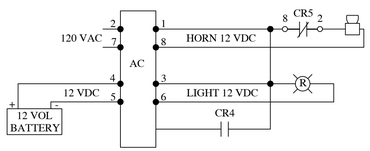




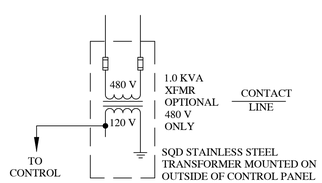
PANEL	RATS	RTU
120 VAC	1	PWR FAIL
R4-1	2	HIGH LEVEL
#1 O.L. AUX	3	PUMP #1 FAIL
#2 O.L. AUX	4	PUMP #2 FAIL
#1 MSB AUX	5	PUMP RUN #1
#2 MSB AUX	6	PUMP RUN #2
120V NEUTRAL	7	120V NEUTRAL
SPARE	8	SPARE
SPARE	9	SPARE
GRD	10	RTU GRD
120V NEUT	11	RTU NEUT
120V RTU SUPPLY	12	RTU SUPPLY PWR
	13	AUXILLARY POWER
	14	GENERATOR GENERAL ALARM
	15	GENERATOR LOW COOLANT
	16	GENERATOR LOW FUEL
	17	GENERATOR FAIL TO START
	18	WET WELL LEVEL
	19	PUMP #1 OVER RIDE
	20	PUMP #2 OVER RIDE
	21	PUMP #1 DISABLE
	22	PUMP #2 DISABLE



INTRINSICALLY SAFE BARRIER



ALARM CONTROLLER



Rev.	Description

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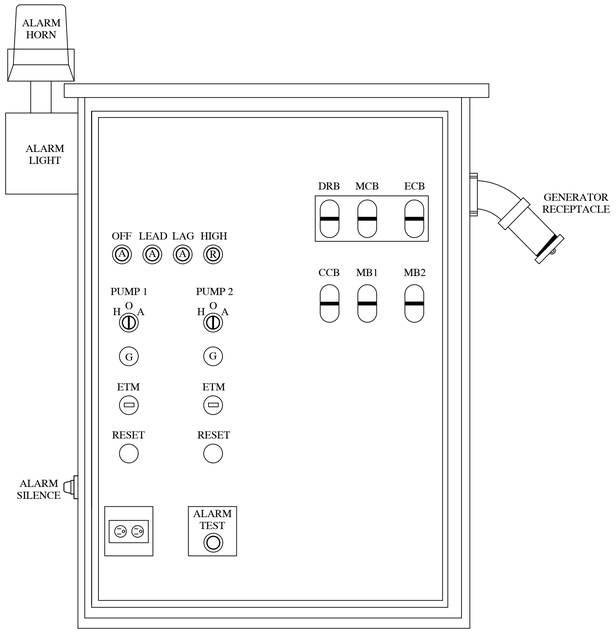
JUPITER, FL 33458-8964
(561) 747-5700 MAIN
(561) 747-9929 FAX
www.loxahatcheeriver.org

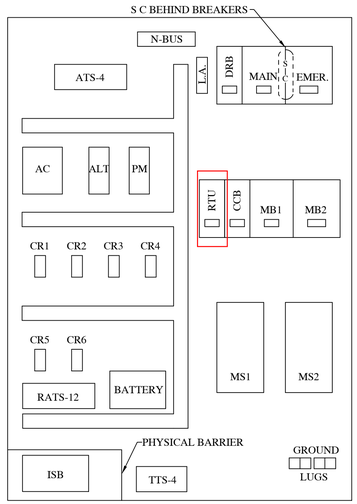
LIFT STATION ELECTRICAL CONTROL PANEL STANDARD DETAILS

Drawn:	JD
Checked:	KD
Proj. Eng.	KD
Scale:	NTS
Date:	6/30/2022

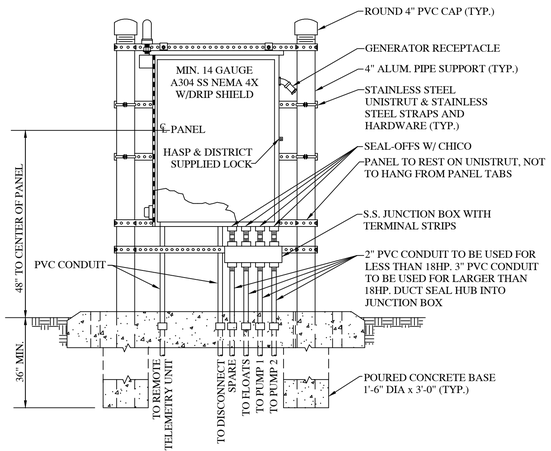
SD-32



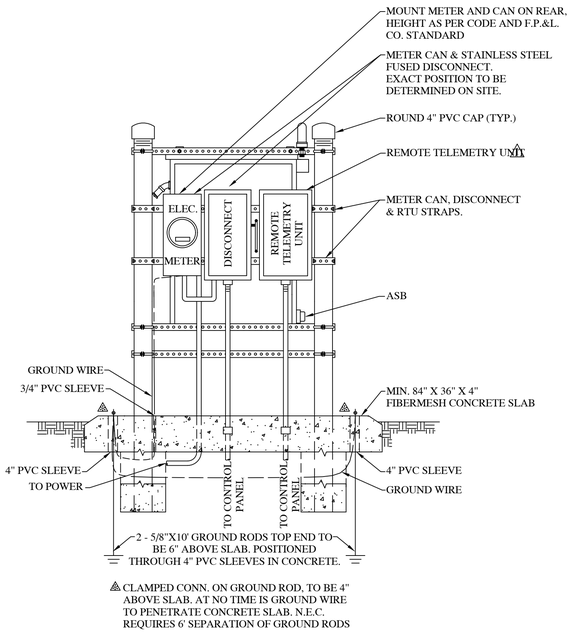
DEAD FRONT LAYOUT



BACKPLATE LAYOUT



FRONT ELEVATION



⚠ CLAMPED CONN. ON GROUND ROD, TO BE 4" ABOVE SLAB. AT NO TIME IS GROUND WIRE TO PENETRATE CONCRETE SLAB. N.E.C. REQUIRES 6' SEPARATION OF GROUND RODS

REAR ELEVATION

Rev.	Description
⚠	4/22/2001 - Added RTU

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LIFT STATION
ELECTRICAL CONTROL PANEL
STANDARD DETAILS

Drawn:	JD
Checked:	KD
Proj. Eng.	KD
Scale:	NTS
Date:	6/30/2022

SD-33

NOTES:

1. FOUR (4) COPIES OF DETAILED INSTALLATION DRAWINGS INCLUDING WIRING DIAGRAMS, PUMP CURVES AND MAINTENANCE AND OPERATING MANUALS SHALL BE SUBMITTED TO THE DISTRICT AT THE TIME OF INITIAL START UP.
2. THE SERVICES OF A FACTORY-TRAINED REPRESENTATIVE SHALL BE FURNISHED FOR THE LIFT STATION START UP. THE REPRESENTATIVE SHALL CHECK ALL ELECTRICAL COMPONENTS, WIRING AND PUMP OPERATIONS.
3. THE PUMP MANUFACTURER SHALL WARRANT THE PUMPS FOR A PERIOD OF FIVE (5) YEARS FROM THE DATE OF PUMP MANUFACTURER'S SHIPPING DATE. THE WARRANTY MUST INCLUDE A MINIMUM 100% COVERAGE OF THE MANUFACTURER'S SHOP LABOR AND PARTS FOR THE FIRST EIGHTEEN MONTHS, THEN 50% COVERAGE THROUGH THE THIRD YEAR, AND 25% COVERAGE THROUGH THE FIFTH YEAR.
4. THE PANEL SHALL INCLUDE BACK-UP CIRCUITRY TO PERMIT ONE PUMP TO OPERATE WITH A NORMAL DRAWDOWN IN THE EVENT OF FAILURE (OPEN CIRCUIT) OF THE "STOP" LEVEL REGULATOR.
5. PROVIDE ONE SPARE ALTERNATOR AND ONE SPARE PHASE MONITOR.
6. A COPY OF THE PANEL WIRING DIAGRAM SHALL BE ATTACHED TO THE INSIDE OF THE OUTER PANEL DOOR. AN EXTRA COPY SHALL BE GIVEN TO THE DISTRICT.
7. SUBSTITUTIONS OF EQUAL, COMPATIBLE MATERIALS WILL BE PERMITTED BUT REQUIRE PRIOR WRITTEN APPROVAL FROM THE DISTRICT.
8. FOUR (4) LEVEL CONTROL FLOAT SWITCHES SHALL BE INSTALLED IN THE WET-WELL TO CONTROL THE OPERATION OF THE PUMPS WITH VARIATIONS OF LIQUID LEVEL IN THE WET-WELL. THE FLOAT SWITCHES SHALL BE "ROTO-FLOAT" BY ANCHOR SCIENTIFIC INC. SWITCHES HERMETICALLY SEALED IN A POLYPROPYLENE CASING WITH A FIRMLY BONDED ELECTRICAL CABLE PROTRUDING.
9. IN ORDER TO ASSURE THE PROPER PERFORMANCE AND COMPATIBILITY OF INTERACTING COMPONENTS WITHIN THE INTENT OF THE SPECIFICATIONS; THE PUMPS, CONTROL CENTER, ACCESS HATCH AND WARRANTY SHALL BE SUPPLIED BY THE SAME VENDOR.
10. BEFORE PLACING INSTALLATION INTO SERVICE, THE PUMP MANUFACTURER SHALL VERIFY THE CORRECT PUMP ROTATION, THE DESIGN G.P.M. & T.D.H. CONDITIONS.
11. JUNCTION BOXES BETWEEN THE WETWELL AND CONTROL PANEL SHALL BE 304SS AND COMPLY WITH LOCAL GOVERNING CODE.
12. ALL CONDUITS SHALL BE SCHEDULE 80 PVC.
13. ALL WIRE TO BE MINIMUM 14 GA.
14. MAIN BREAKER AND EMERGENCY GENERATOR BREAKERS SHALL BE MECHANICALLY INTERLOCKED.

BILL OF MATERIALS

ALARM HORN	877-EI	EDWARDS SIGNALING
PUSH BUTTON	9001SKR3U	SQD
BREAKER STANDOFF		
CONTROL BREAKER (CCB), DUPLEX RECEPTACLE BREAKER (DCB), & RTU BREAKER (RTUB)	FAL 12015	SQD
MAIN BREAKER	FAL 36 *	SQD
EMERGENCY BREAKER	FAL 36 *	SQD
LIGHTNING ARRESTOR	AG6503	INTERMATIC
CONTACT BLK	9001-KA2	SQD
DEADFRONT	ALUM	
ENCLOSURE W/DRIP SHIELD (NOTE) 48"x36"x12" FOR MOTOR STARTER NEMA SIZE 3 OR ABOVE	A36H30 10" SSLP	HOFFMAN OR EQUIV.
INT PANEL (SUB)	SIZED TO ENCLOSURE	
ALARM LIGHT	2ERP1	CONDOR
FUSE	AGU-5	BUSSMAN
GEN. ADAPTER	AJA100	APPLETON
GEN. RECEPTACLE W/SCREW CAP OR	ADR1034RS	APPLETON
ALTERNATE GENERATOR RECEPTACLE	AR-1048-S22	CROUSE-HINDS
GFI-RECEPTACLE	SIR-15-IV	SLATER
GFI-RECEPTACLE	68991	LEVITON
INTERLOCK MECHANICAL	MAIN BREAKER/ EMERGENCY BREAKER	
PILOT LIGHT	NLD 22 (COLOR AS REQ'D)	TEMOIN
LUG KIT CB	PDC6FA6	SQD
MOTOR STARTER	8536 *	SQD
OVERLOAD MODULE	9999 SO-4	SQD
ELECTRICAL INTERLOCK	9999 SX-6	SQD
PHASE MONITOR	SLA-230-ASA / SLA-440-ASA	DIVERSIFIED
ALTERNATOR	ARB-120-AEA	DIVERSIFIED
ALTERNATOR	008-120-13SP	STA-CON
3 POLE FORM C CONTROL RELAY	RR 3 BULAC 120V	IDEC
8 PIN SOCKETS ALT & PM	SR2P-06	IDEC
11 PIN SOCKETS	SR3B05	IDEC
8 PIN SOCKETS	SR2P-06	IDEC
SURGE CAPACITOR	9L18-BBB-301	G.E.
HOA	9001SKS43B	SQD
ALARM TERM STRIP	9080 GR6 (4 SEC)	SQD
THERMAL TERM STRIP	9080 GR6 (4 SEC)	SQD
RATS TERM STRIP	9080 GR6 (12 SEC)	SQD
THERMALS OVERLOADS	*	SQD
FLOATS (NORMALLY OPEN)	50 FT. "ROTO-FLOAT"	ANCHOR SCIENTIFIC INC.
FUSED DISCONNECT A.I.C. RATED TO F.P.L. SUPPLY — DISCONNECT (STAINLESS STEEL)	NEMA 4X (240/600) W/ SOLID NEUTRAL ASSY.	SQD
DISCONNECT (STAINLESS STEEL)	NEMA 4X (240/600) W/ SOLID NEUTRAL ASSY.	CUTLER HAMMER
STAINLESS STEEL TRANSFORMER 480x120 1.0 KVA	1S1FSS	SQD
ELAPSED TIME METER	MODEL 7-10	STEMCO ENGLER
NEUT BLK		
ALARM CONTROLLER (AC)	BOAC-001	MPE
INTRINSICALLY SAFE BARRIER (ISB)	EB3C-R05A	IDEC
BATTERY	MWA12-7F	WERKER
NOTE: * SIZED PER PUMP MANUFACTURER REQUIREMENTS		

Rev.	Description

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www.loxahatcheeriver.org

LIFT STATION
ELECTRICAL CONTROL PANEL
STANDARD DETAILS

Drawn:	JD
Checked:	KD
Proj. Eng.	KD
Scale:	NTS
Date:	7/19/2022

SD-34

LOXAHATCHEE RIVER DISTRICT
2500 JUPITER PARK DRIVE, JUPITER, FLORIDA 33458 TEL: (561) 747-5700 FAX: (561) 747-9929
D. Albrey Arrington, Ph.D. EXECUTIVE DIRECTOR loxahatcheeriver.org

MEMORANDUM

To: LRD Administrative Committee
From: Kara Fraraccio, Director of Finance and Administration
Date: September 9, 2022
Subject: Retirement Plan Administrative Committee Update

We have found that under our current Retirement Plan (i.e., Money Purchase Plan and Trust), part-time, temporary, and seasonal employees (including interns) are eligible to participate in the Plan after working for the District for three years (see schedule below):

Year 1 – Part-time/temporary/seasonal status and excluded from Plan

Year 2 – Part-time/temporary/seasonal status, no longer excluded from Plan and in eligibility period

Year 3 – Eligible to participate in the Plan

Since switching to Empower Retirement's proto-type plan, the District has had two participants enter the Plan eligibility period during their part-time/temporary/seasonal status. These employees were both hired in 2019, one as a part-time employee and the other as an intern. Both employees have since become full-time employees at the District.

The LRD did not administer the Plan in such a way prior to switching to the Empower Retirement proto-type plan. Prior to Empower Retirement, all Part-time, temporary, seasonal employees (including interns) were not eligible to participate in the Retirement Plan or begin the eligibility period at anytime in which they were considered part-time/temporary/seasonal status.

The Administrative Committee (Dr. Rostock, Dr. Arrington, Mr. Ryan and Ms. Fraraccio) discussed each scenario and voted unanimously to recommend that the Governing Board amend our Retirement Plan to exclude part-time/temporary/seasonal employees (including interns) from the Plan in entirety. We are waiting on confirmation from Empower that our requested revision is possible given the constraints of their system.

At this time, I request the Governing Board approve the following motion:

> **"THAT THE DISTRICT GOVERNING BOARD amend our Money Purchase Plan and Trust to delete the text *"However, if any such excluded Employee actually completes a Year of Service, then such Employee will no longer be part of this excluded class"* pending review and confirmation from Empower.**

LOXAHATCHEE RIVER DISTRICT
2500 JUPITER PARK DRIVE, JUPITER, FLORIDA 33458 TEL: (561) 747-5700 FAX: (561) 747-9929
D. Albrey Arrington, Ph.D. EXECUTIVE DIRECTOR loxahatcheeriver.org

MEMORANDUM

To: LRD Administrative Committee
From: Kara Fraraccio, Director of Finance and Administration
Date: September 9, 2022
Subject: Personnel Policies and Procedures Section 5.1 Retirement Plan

The description of the retirement plan in the District's Personnel Policies and Procedures (i.e., Section 5.1) is outdated. In early September, staff drafted recommended revisions to Section 5.1 and presented them to the Retirement Plan Administrative Committee, and after consideration the Retirement Plan Administrative Committee voted unanimously to recommend that the LRD Governing Board ratify and approve the Loxahatchee River District's Personnel Policies Section 5.1 – Retirement Plan as revised and with an effective date of September 16, 2022. A redlined version of Section 5.1 is provided for your review following this memo.

At this time, I request the Governing Board approve the following motion:

> **"THAT THE DISTRICT GOVERNING BOARD ratify and approve the Loxahatchee River Environmental Control District's Personnel Policies and Procedures Section 5.1 – Retirement Plan as revised with an effective date of September 16, 2022 and authorize the District's Executive Director to update the Personnel Policies and Procedures from time to time, and periodically present it to the Governing Board for ratification and approval."**

5.1 Retirement Plan

To participate in the District's Retirement Plan (Money Purchase Plan and Trust) you must be 18 years of age and have worked at the District for a minimum of one (1) year. ~~The retirement plan has two entry dates; January and July. Employees hired from January 1 through June 30 will be admitted to the retirement plan in July of the following year, and subsequently they will have a July retirement plan anniversary date. Employees hired July 1 through December 31 will be admitted to the retirement plan in January of the following year, and subsequently they will have a January retirement plan anniversary date. For example, an employee hired February 4, 2014 would be admitted to the retirement plan in July 2015. An employee hired December 30, 2014 would be admitted to the retirement plan in January 2016.~~ On the first payroll containing your one- year anniversary date, the District will automatically start making contributions to your account. Contributions consist of a 12% District contribution and a 4% mandatory employee contribution. For tax purposes, this mandatory contribution is considered an Employer contribution (called a pick-up contribution). This means that the mandatory contribution will be paid by the District and will not be subject to federal income tax until you withdraw from the Plan.

~~Upon entering the retirement plan you will begin contributing 4% and the District will begin contributing 12% of your gross income into two retirement plan accounts opened in your name with Morgan Stanley. At this time, you will have the opportunity to sit down with the retirement representative to discuss and make investment decisions. Thereafter, you can address and/or revise your retirement plan investment decisions during normal business hours throughout the year. You may direct your 4% retirement account according to the guidelines of the Retirement Plan. The 12% account will stay in cash until you have reached your two-year retirement plan anniversary date (i.e., your vesting date). At your two-year retirement plan anniversary date, you will be fully vested in the retirement plan and can direct your full retirement balance according to the Retirement Plan guidelines. If you leave the District before your vesting date (e.g., your two-year retirement plan anniversary date) you will forfeit your 12% account and the funds will return to the District.~~

You are able to direct the investment of your entire interest in the Plan. The District offers a Core Investment Menu of approximately 30 funds for you to select from, or, for a minimal fee, you can invest through the Self-Directed Brokerage Window which will allow you to invest in the open market. If you do not direct your contributions, then your accounts will be invested in accordance with the default investment alternative established under the Plan, currently the American Funds Target Date Retirement Fund corresponding to your assumed retirement age of 65 years of age. The Plan is currently held with Empower Retirement.

You are always vested in your 4% contribution, however, after three full years of working at the District you will be fully vested in the Plan and will retain 100% of the contributions made to your account. You may receive distributions of your vested portion of the Plan once you reach the age 59 1/2 or separate employment from the District. If you leave the District before your vesting date you will forfeit your 12% contributions and the funds will return to the District.

LOXAHATCHEE RIVER DISTRICT
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D. Albrey Arrington, Ph.D. EXECUTIVE DIRECTOR loxahatcheeriver.org

MEMORANDUM

To: D. ALBREY ARRINGTON, Ph.D., Executive Director
FROM: JASON A. PUGSLEY, P.E., Operations – Plant Manager
DATE: SEPTEMBER 9, 2022
SUBJECT: FISCAL YEAR 2023 – ANNUAL PURCHASE ORDER FOR ANNUAL LANDSCAPE SERVICES WITH TERRACON SERVICES, INC.

The amount included in the District's FY 2023 budget is sufficient to cover the amount of this request.

In October 2019, the District's Governing Board entered into agreement with Terracon Services, Inc. (Terracon). The contract provides the annual landscape services necessary for the complete maintenance of the lawn and landscaped areas at specific District Facilities, including the plant site at 2500 Jupiter Park Drive, designated lift/pump station sites, the River Center and the District's 20-acre parcel located in Jupiter Farms.

The terms of the agreement included an initial period of two (2) years from November 1, 2019 through September 30, 2021. The initial period covered services during Fiscal Year's 2020 and 2021. The agreement also provided, at the sole option of the District, that the District's Governing Board may extend the agreement annually for up to three (3) additional one-year periods.

It is the opinion of staff that Terracon has done a satisfactory job, and we support continuing our contract for Fiscal Year 2023 (October 1, 2022 through September 30, 2023) under Year 2 of the additional three, (1) one-year periods. Per the executed contract agreement, all contract unit prices will be increased based on a review of the June 2022 consumer price index (CPI) up to a maximum 5% rate increase.

Staff recommends the following motion:

"THAT THE DISTRICT GOVERNING BOARD authorize the Executive Director to execute an annual purchase order to Terracon Services, Inc. in accordance with the contract specifications and their bid dated October 4, 2019, for the annual landscape service for Fiscal Year 2023 in an amount Not-to-Exceed $62,861.52, as well as a contingency amount of $5,000.00"

TERRACON
SERVICES, INC.

August 31, 2022

Sharyn Allen
Loxahatchee River District
2500 Jupiter Park Drive
Jupiter, FL 33458

Re: Contract 19-005

Dear Ms. Allen,

Terracon Services, Inc. would like to request a one year extension to the current contract listed above. We would also like to request the 5% maximum raise as allowed in the contract as the current CPI-U is at 8.5%.

Please let me know if you have any questions or concerns.

Thank you,

Andrea Bonard
Maintenance Contract Administrator
Terracon Services, Inc.
561-214-0871

LOXAHATCHEE RIVER DISTRICT
2500 JUPITER PARK DRIVE, JUPITER, FLORIDA 33458 TEL: (561) 747-5700 FAX: (561) 747-9929

D. Albrey Arrington, Ph.D. EXECUTIVE DIRECTOR loxahatcheeriver.org

MEMORANDUM

DATE: September 7, 2021

DEPARTMENT: Customer Service - Bud Howard, Director of Information Services

PURCHASE AMT: Not to exceed $40,000

BUDGET: Postage: $30,000 from 40-42-5420
Printing: $10,000 from 40-42-5340

ACTION REQUEST: Authorization of an annual purchase order for bill printing and mailing services not to exceed $40,000.

DESCRIPTION:

Each quarter we mail approximately 31,000 print bills and 3,500 past due notices, for a total of approximately 138,000 bills each year. Printing and handling costs are 10.5 cents each, and postage is typically 44 cents each, depending on the destination. We also receive a digital copy of each bill for archival purposes for 1 cent each, and we typically print on the back of the bills for more message space for approximately 1 cent each depending on print coverage. We regularly encourage our customers to receive their bill by email (eBill to help contain these costs and we continue to see a gradual increasing trend in the number of eBill recipients. Most of our customers prefer to receive both print and email bills.

Postage comprises the bulk (80% of this purchase and is a fixed cost based on current US Postal Service rates and is exempt for our procurement process. However, in an abundance of transparency we bring this purchase order to the Board for consideration.

This authorization is to provide printing and mailing services as we transition to our new payment services provider, Edmunds GovTech, and their printing and mailing partner named Professional Mail Services, Inc. (PMSI. We anticipate going live with Edmunds in December 2022, but there could be delays so we have provided extra time (through March 2023 in this purchase order.

“THAT THE DISTRICT GOVERNING BOARD authorizes the Executive Director to approve a purchase order to Arista Information Systems, Inc. in the amount not-to-exceed $40,000 for printing, postage and digital archives of the District’s sewer bills for a portion of Fiscal Year 2022-2023 according to our agreement dated December 22, 2015"

LOXAHATCHEE RIVER DISTRICT
2500 JUPITER PARK DRIVE, JUPITER, FLORIDA 33458 TEL: (561) 747-5700 FAX: (561) 747-9929

D. Albrey Arrington, Ph.D. EXECUTIVE DIRECTOR loxahatcheeriver.org

MEMORANDUM

To: D. ALBREY ARRINGTON, Ph.D., Executive Director
FROM: JASON A. PUGSLEY, P.E., Operations – Plant Manager
DATE: SEPTEMBER 9, 2022
SUBJECT: FISCAL YEAR 2023 – ANNUAL PURCHASE ORDER FOR BIOSOLIDS HAULING SERVICES WITH SYNAGRO SOUTH, L.L.C.

The amount included in the District's FY 2023 budget is sufficient to cover the amount of this request.

In August 2018, the District's Governing Board entered into an agreement with Synagro South, L.L.C. The contract provides for the hauling of dewatered biosolids from the District's Wastewater Treatment Plant (WWTP) to the Solid Waste Authority biosolids drying and processing facility. The terms of the agreement included an initial period of two (2) years from October 1, 2018 through September 30, 2020. The initial period covered services during Fiscal Year's 2019 and 2020. The agreement also provided, at the sole option of the District, that the District's Governing Board may extend the agreement for up to three (3) additional one-year periods.

It is the opinion of staff that Synagro South, L.L.C. has done a satisfactory job, and we support continuing our contract for Fiscal Year 2023 (October 1, 2022 through September 30, 2023) under Year 3 of the additional three, (1) one-year periods. Per the executed contract agreement, all contract unit prices will be increased 9.06% based on the June 2022 consumer price index (CPI).

Staff recommends the following motion:

"THAT THE DISTRICT GOVERNING BOARD authorize the Executive Director to execute an annual purchase order to Synagro South, LLC in accordance with the contract specifications and their bid dated August 6, 2018, for the offsite hauling of dewatered biosolids for Fiscal Year 2023 in an amount Not-to-Exceed $175,000.00"

435 Williams Court, Suite 100
Baltimore, MD 21220
www.synagro.com

SYNAGRO

August 3, 2022

Hazel Figueroa, Purchasing
Loxahatchee River District
2500 Jupiter Park Drive
Jupiter, FL 33458

RE: CPI Cost Adjustment

Dear Ms. Figueroa:

Per our contract, Synagro is entitled to an adjustment of our contract price(s) effective at the anniversary of the contract. Such price(s) shall be adjusted annually consistent with the U.S. Department of Labor, Bureau of Labor Statistics' Consumer Price Index (CPI) for All Urban Consumers, Not Seasonally Adjusted with the base being June 2021. We hereby inform you that an adjustment for cost escalation has been calculated as follows:

Item Description	CPI Percentage Multiplier	Base Price	Price Adjustment Percentage	New Price	Unit
Haul Dewatered Biosolids	100.00 %	$305.71	9.06%	$333.41	Load

We shall prepare our invoices effective October 1, 2022 through September 30, 2023 with the adjusted unit prices, as stated above.

Again, we greatly appreciate your business and thank you for your consideration.

Sincerely,

Christina White

Christina White
Services Sr. Accountant

cc: Steve Reel, Elizabeth Grant, Jessica Stahl, Phyllis Ray, File

U.S. BUREAU OF LABOR STATISTICS

Databases, Tables & Calculators by Subject

Change Output Options: From: 2012 To: 2022 GO
☐ include graphs ☐ include annual averages More Formatting Options

Data extracted on: July 29, 2022 (10:41:20 AM)

CPI for All Urban Consumers (CPI-U)

Series Id: CUUR0000SA0,CUUS0000SA0
Not Seasonally Adjusted
Series Title: All items in U.S. city average, all urban consumers, not seasonally adjusted
Area: U.S. city average
Item: All items
Base Period: 1982-84=100

Download: xlsx

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	HALF1	HALF2
2012	226.665	227.663	229.392	230.085	229.815	229.478	229.104	230.379	231.407	231.317	230.221	229.601	228.850	230.338
2013	230.280	232.166	232.773	232.531	232.945	233.504	233.596	233.877	234.149	233.546	233.069	233.049	232.366	233.548
2014	233.916	234.781	236.293	237.072	237.900	238.343	238.250	237.852	238.031	237.433	236.151	234.812	236.384	237.088
2015	233.707	234.722	236.119	236.599	237.805	238.638	238.654	238.316	237.945	237.838	237.336	236.525	236.265	237.769
2016	236.916	237.111	238.132	239.261	240.229	241.018	240.628	240.849	241.428	241.729	241.353	241.432	238.778	241.237
2017	242.839	243.603	243.801	244.524	244.733	244.955	244.786	245.519	246.819	246.663	246.669	246.524	244.076	246.163
2018	247.867	248.991	249.554	250.546	251.588	251.989	252.006	252.146	252.439	252.885	252.038	251.233	250.089	252.125
2019	251.712	252.776	254.202	255.548	256.092	256.143	256.571	256.558	256.759	257.346	257.208	256.974	254.412	256.903
2020	257.971	258.678	258.115	256.389	256.394	257.797	259.101	259.918	260.280	260.388	260.229	260.474	257.557	260.065
2021	261.582	263.014	264.877	267.054	269.195	271.696	273.003	273.567	274.310	276.589	277.948	278.802	266.236	275.703
2022	281.148	283.716	287.504	289.109	292.296	296.311							288.347	

Sharyn Allen

From: Christina White <cwhite@SYNAGRO.com>
Sent: Wednesday, August 3, 2022 9:33 AM
To: Hazel Figueroa
Cc: Tod Tucker; Steve Reel
Subject: Loxahatchee River, FL- CPI
Attachments: CPI index Loxahatchee River, FL 7.29.22.pdf; CPI_Loxahatchee River FL_7.29.22.docx

Good Morning,

Synagro is requesting an adjustment of our contract price. Please see the attached letter of request and if you are in agreement we shall adjust our invoices effective October 1, 2022. If you have any questions or concerns, please let us know. We appreciate your business.

Thank you,
Christina White

Christina White
Senior Accountant
435 Williams Court, Suite 100, Baltimore, MD, 21220
O: 1-443-489-9000
cwhite@SYNAGRO.com | synagro.com
Facebook | Twitter | Linkedin

LOXAHATCHEE RIVER DISTRICT
2500 JUPITER PARK DRIVE, JUPITER, FLORIDA 33458 TEL: (561) 747-5700 FAX: (561) 747-9929

D. Albrey Arrington, Ph.D. EXECUTIVE DIRECTOR loxahatcheeriver.org

MEMORANDUM

To: D. ALBREY ARRINGTON, Ph.D., Executive Director
FROM: JASON A. PUGSLEY, P.E., Operations – Plant Manager
DATE: SEPTEMBER 9, 2023
SUBJECT: FISCAL YEAR 2023 – ANNUAL PURCHASE ORDER FOR SLUDGE PROCESSING AND DISPOSAL WITH SOLID WASTE AUTHORITY OF PALM BEACH COUNTY

The amount included in the District's FY 2023 budget is sufficient to cover the amount of this request.

The District processes and dewaters biosolids onsite which are then hauled to the Solid Waste Authority of Palm Beach County (SWA) Biosolids Processing Facility (BPF) for further treatment and disposal. The SWA BPF employs a heating process which dries and converts the biosolids to a pelletized form which is then distributed as a Class AA biosolids fertilizer. The terms of the District's agreement with SWA require the District to pay unitized cost for Operation and Maintenance (O&M) of the BFP. The unitized cost is determined annually and is based on the estimated biosolids tonnage to be processed at the facility by all participating members and the estimated operating cost of the BFP.

SWA initially provided a preliminary unitized treatment cost of $73.08/ton for FY2023. However, since the issuance of this preliminary rate, SWA performed additional analyses and determined that the FY2023 unitized cost will likely be much higher. As such, Staff has budgeted based on the updated and higher estimated treatment cost provided by SWA of $83.86/ton. This represents a 42.4% increase over the Fiscal Year 2022 unitized cost of $58.90. This increase is primarily driven by a significant reduction in the available volume and quality of land fill gas. As a result, SWA is projecting significant variability in the cost associated with the purchase of natural gas to supplement the drying process.

Staff recommends the following motion:

"THAT THE DISTRICT GOVERNING BOARD authorize the Executive Director to execute an annual purchase order to Solid Waste Authority of Palm Beach County for the processing and disposal of biosolids at the Biosolids Processing Facility for Fiscal Year 2023 in accordance with the Interlocal Government Agreement for Biosolids Processing in an amount Not-to-Exceed $1,000,000.00"

YOUR PARTNER FOR
SOLID WASTE SOLUTIONS

BIOSOLIDS PROCESSING FACILITY
Final Budget O&M Cost/Ton – FY2023

MEMORANDUM

TO: BPF Partners

FROM: Scott Trainor, P.E., BCEE, Biosolids Facility Operations Manager

COPY: Nate Mayer, P.E., BCEE, SWA Director Project Management & Facility Development

Donna Levengood

DATE: August 3, 2022 (Revised August 22, 2022)

SUBJECT: FY2023 Final Budget

Greetings Partners:

Please find attached the Final Biosolids Facility Budget for FY2023. We are keeping the FY2023 Biosolids Tipping Fee at $73.08 as it was in the Preliminary Budget transmitted to you on June 1. However, as shown in the revised preliminary budget transmitted on July 20, due to much uncertainty in the natural gas forecasts, a final cost/ton at reconciliation will likely be around $83.86/ton. I strongly suggest the difference is set aside so that it will be available after reconciliation in November of 2023.

If you have any questions, please contact me.

Thank You.

7501 North Jog Road, West Palm Beach, Florida 33412 Phone (561) 640-4000 Fax (561) 640-3400

YOUR PARTNER FOR
SOLID WASTE SOLUTIONS

BIOSOLIDS PROCESSING FACILITY
Final Budget O&M Cost/Ton – FY2023

This is the final version of the FY2023 budget as prepared in August 2022 (prior to September 1, per the requirements of the partner ILAs).

Base Processing Fee (Estimated Operator Contract Fee)

Tier 1: 0 to 91,250 WTY	$ 39.03
Tier 2: >91,250 to 104,000 WTY	$ 19.89
Tier 3: >104,000 WTY	$ 17.50
Average Base Processing Fee/Ton (based on 125,000 WTY)	$33.46

Budget Pass-Through Costs Per Ton

Electric	$ 6.15
Natural Gas	22.75
Potable water	0.50
ISW	1.65
WW	1.14
Na Hypochlorite	0.27
Caustic	0.15
LFG Delivery System	3.38
SWA Administrative Costs	3.63
Sub Total Pass-Through Costs/Ton	$ 39.62

Budget O&M Cost/Ton

Tier 1: 0 to 91,250 WTY	$ 66.33
Tier 2: >91,250 to 104,000 WTY	$ 47.19
Tier 3: >104,000 WTY	$ 44.80

FY2023 Blended Cost/Ton Billing Rate **$ 73.08**

(Based on receiving 125,000 WTY)

File: BPF.02.10.01.FY2023/FY2023 Final Budget O and M Costs 8-3-2022

LOXAHATCHEE RIVER DISTRICT
2500 JUPITER PARK DRIVE, JUPITER, FLORIDA 33458 TEL: (561) 747-5700 FAX: (561) 747-9929
D. Albrey Arrington, Ph.D. EXECUTIVE DIRECTOR loxahatcheeriver.org

MEMORANDUM

To: Governing Board
From: Kara Fraraccio, Director of Finance and Administration
Date: September 9, 2022
Subject: Authorize FY2023 Fuel Procurement

Staff is requesting Board approval to purchase bulk fuel (i.e., off-road diesel, on-road diesel, and unleaded gasoline) during the fiscal year 2023 for the following not to exceed quantities:

Diesel No. 2	80,000 Gallons
Unleaded Fuel	1,500 Gallons

*These expected annual quantities are based on historical usage trends.

For an amount not to exceed $360,000.

Procurement of bulk fuel (essentially a commodity with highly dynamic daily pricing) does not naturally fit into our existing Procurement Policy. Therefore, we are seeking your approval for the quantity of fuel we anticipate needing in FY 2023. We will follow our bulk fuel procurement procedure described below:

1. Determine there is a need for bulk fuel.
2. Obtain real-time bulk fuel availability and pricing from a minimum of three bulk fuel vendors (e.g., Glover Oil Company, Inc., Palmdale Oil Company, Martin County Petroleum).
3. Place order with bulk fuel provider that (1) has the needed fuel available and (2) has the best total unit cost on that date.

The following motion is suggested for approval:

"THAT THE DISTRICT GOVERNING BOARD authorize the Executive Director to purchase bulk diesel and unleaded fuel in quantities not to exceed Diesel No. 2 of 80,000 Gallons and Unleaded Fuel of 1,500 Gallons for an amount not to exceed $360,000 using the District's bulk fuel procurement procedure."

LOXAHATCHEE RIVER DISTRICT
2500 JUPITER PARK DRIVE, JUPITER, FLORIDA 33458 TEL: (561) 747-5700 FAX: (561) 747-9929

D. Albrey Arrington, Ph.D. EXECUTIVE DIRECTOR loxahatcheeriver.org

MEMORANDUM

To: D. ALBREY ARRINGTON, Ph.D., Executive Director
FROM: JASON A. PUGSLEY, P.E., Operations – Plant Manager
DATE: SEPTEMBER 9, 2022
SUBJECT: FISCAL YEAR 2023 – ANNUAL PURCHASE ORDER AUTHORIZATION FOR CHLORINE WITH ALLIED UNIVERSAL CORPORATION

This is a budgeted item in the FY2023 budget in the amount of $225,000.

Chlorine disinfection is an essential part of the District's wastewater treatment plant system and more specifically the production of Irrigation Quality (IQ) Water.

District Staff issued a competitive bid solicitation in accordance with the District's procurement policy for the Supply of Liquid Chlorine (ITB No. 22-012-00122). A total of two (2) bids were received on August 24, 2022. The Bid amounts submitted were as follows:

1. Allied Universal Corporation (Allied) $2,124.65/ton
2. Brenntag Mid-South (Brenntag) $2,549.00/ton (First 3 months, only)

Upon receipt of the Bids, District Staff reviewed and evaluated the Bid received from the apparent low bidder (Allied) to confirm conformance with the Bid specification requirements including the District's Contractor Management Policy. Staff has determined that Allied meets the minimum requirements stipulated in the Bid specifications and have the experience and facilities for the Supply of Liquid Chlorine to the District. It should be noted that, due to current market conditions, the unit cost of chlorine has significantly increased from the current contract amount paid by the District at $1,065.50/ton. It is estimated that the District will utilize approximately 112-tons of chlorine during Fiscal Year 2023.

Staff recommends the following motion:

"THAT THE DISTRICT GOVERNING BOARD authorize the Executive Director to execute a purchase order to Allied Universal Corporation for the Supply of Liquid Chlorine, in accordance with District ITB No. 22-012-00122 for the period of October 1, 2022 through September 30, 2023, in an amount Not-to-Exceed $240,000."

LOXAHATCHEE RIVER DISTRICT
2500 JUPITER PARK DRIVE, JUPITER, FLORIDA 33458 TEL: (561) 747-5700 FAX: (561) 747-9929

D. Albrey Arrington, Ph.D. EXECUTIVE DIRECTOR loxahatcheeriver.org

MEMORANDUM

DATE: September 8, 2022

DEPARTMENT: Customer Service - Bud Howard, Director of Information Services

BUDGET: Payment processing services budgeted item of $110,000 for FY2023; Account #: 40-42-5340

DESCRIPTION:

This request is to execute Second Amendment to our Master Services Agreement with First Billing Services, our credit/debit card and eCheck payment services provider, and authorize a not to exceed purchase order for these services as we transition to our new payment services provider.

The District strives to provide convenient, efficient, and secure payment methods for our customers to pay their quarterly sewer service charges and connection charges. Each year we process over 60,000 credit card and direct debit payments totalling over $7M.

First Billing Services/Paya is currently our payment services provider for credit/debit card or eCheck transactions through our website, phone call, walk in, text message or recurring automatic payments. Following a Request for Proposals solicitation and selection, the Governing Board approved a 3-year agreement with First Billing Services on September 21, 2017. In January 2018 we "went live" with First Billing and their performance has been "satisfactory" under our contractor rating system. In June 2020, the Governing Board authorized the two-year extension offered under our original agreement.

First Billing has offered to extend the terms of our agreement as we transition to our new payment services provider, Edmunds GovTech, which was authorized by the Board in February 2022. We anticipate going live with Edmunds in December 2022, but there could be delays so we have provided extra time (through March 2023) in this agreement and purchase order. The Second Amendment can be cancelled with a written 60-day cancellation notice and there are no minimum charges. Legal Counsel has reviewed this memo and agreement and finds it legally sufficient.

Therefore, we offer the following suggested motion:

"THE DISTRICT GOVERNING BOARD authorizes the Executive Director to execute the Second Amendment to the Master Services Agreement with First Billing, and approve an annual not to exceed purchase order in the amount of $50,000 for FY2023."

SECOND AMENDMENT TO MASTER SERVICES AGREEMENT

THIS SECOND AMENDMENT (this "Amendment") is entered into as of the 6th day of October 2022, (the "Effective Date") by and between Loxahatchee River District, ("Customer") and First Mobile Trust, LLC. an Ohio limited liability company, ("First Billing" or "FBS").

WHEREAS First Billing and Customer entered into a Master Services Agreement dated October 6th, 2017 (the "Agreement") for the purpose of First Billing providing payment services to Customer.

WHEREAS, First Billing and Customer entered into a First Amendment to Master Services Agreement dated July 6th 2021.

WHEREAS First Billing and Customer desire to modify the Agreement as set forth in this Amendment.

NOW, THEREFORE, in consideration of the foregoing, of the mutual promises set forth herein, and for other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged by the parties hereto, the parties hereto, intending legally to be bound, do hereby covenant and agree as follows:

1. Recitals; Defined Terms. The foregoing recitals are hereby incorporated by this reference and made a substantive part hereof. Any capitalized terms not otherwise defined herein shall have the meaning set forth in the Agreement.

2. Term. The terms of the Amendment shall be extended for an additional 12 months beginning on the Effective date of this Amendment. This agreement may be terminated by providing the other party with a written 60-day cancellation notice.

3. Authority. First Billing and Customer represent and warrant that they each have the authority to enter into and to perform the terms of this Amendment.

4. Binding Effect. This Amendment shall be binding upon, and shall inure to the benefit of, the parties hereto and their respective successors and permitted assigns.

5. Ratification. Except as modified hereby, the Agreement is hereby ratified and confirmed for all purposes and in all respects and remains in full force and effect.

6. Counterparts. This Amendment may be executed in one or more counterparts, each of which when executed shall be deemed to be an original, but all of which taken together shall constitute one and the same agreement; provided, that delivery of a signature of this Amendment by facsimile

transmission or other form of electronic mail attachment shall be effective as delivery of a manually executed counterpart hereof prior to and in the absence of manual delivery.

IN WITNESS WHEREOF, First Billing and Customer have executed this Second Amendment as of the Effective Date.

FIRST BILLING, LLC	**LOXAHATCHEE RIVER DISTRICT**
By: _____	By: _____
Name: _____	Name: _____
Its: _____	Its: _____
Date: _____	Date: _____

LOXAHATCHEE RIVER DISTRICT
2500 JUPITER PARK DRIVE, JUPITER, FLORIDA 33458 TEL: (561) 747-5700 FAX: (561) 747-9929
D. Albrey Arrington, Ph.D. EXECUTIVE DIRECTOR loxahatcheeriver.org

MEMORANDUM

TO: D. Albrey Arrington, Ph.D., Executive Director

FROM: Kris Dean, P.E., Deputy Executive Director/Director of Engineering Services

DATE: September 08, 2022

SUBJECT: Contract Award : ITB # 21-008-00107-WWSH Hauling of Liquid Domestic Wastewater, Sludge and Collection System Debris

The District periodically requires the services of vendors to haul wastewater, sludge and/or debris from our collection system and the vacuum truck dump pit to Florida Department of Environmental Protection (FDEP) and/or County Health Department approved disposal sites.

This contract expires on September 30, 2022 and allows for an initial 1-year period with optional four (4) 1-year renewals with a CPI-U based price escalator. Staff propose to exercise the first of four (4) 1-year renewals. The vendor has waived the CPI-U adjustment.

Staff recommend the following motion:

"THAT THE DISTRICT GOVERNING BOARD authorize the first of four (4) 1-year renewals to Raider Rooter for ITB # 21-008-00107-WWSH Hauling of Liquid Domestic Wastewater Sludge and Collection System Debris in the amount not to exceed $30,000".

On Wed, Aug 24, 2022 at 11:25 AM Jim Novak <jim.novak@lrecd.org> wrote:

> To Whom it may concern:
>
> Please complete the renewal and agree to the CPI adjustment. This will go to the September LRD Board for approval. We will need it ready by 9/8/2022.
>
> Since I will be out of office rest of month you can contact Sharyn Allen LRD Purchasing Agent with any potential questions.
>
> Thank you.

Jim Novak

Collections & Distribution Superintendent

Loxahatchee River Environmental Control District

2500 Jupiter Park Drive

Jupiter, FL 33458

(561) 401-4178

(561) 743-3027 Fax

Email: **jim.novak@lrecd.org**

Kris Dean

Subject: FW: Request Important Update to LRD Contract
Attachments: Bradford W9.pdf; Mike License 2024.pdf; scanlox.pdf

From: **Raider Rooter** <office@raiderrooter.com>
Date: Wed, Aug 24, 2022 at 12:08 PM
Subject: Re: Request Important Update to LRD Contract
To: Jim Novak <jim.novak@lrecd.org>, <Sharyn.Allen@lrecd.org>

Good Afternoon,

As per our conversation, please see attached for the updated contract, W-9 and Contractor's License. Please update your system to reflect our new mailing address: 525 Gator Dr, Lantana, FL 33462. If you have any questions, I can be reached via email or by contacting the office at 561-737-8818.

Thank You,

Danielle Constantino

Accounts Receivable

**** PLEASE NOTE OUR NEW MAILING ADDRESS: 525 Gator Drive, Lantana, FL 33462**

525 Gator Drive, Lantana, FL 33462
Phone: 561-737-8818 Fax: 561-509-8536
www.RaiderRooter.com

PLEASE REVIEW US ON ANGIES LIST
my.angieslist.com/angieslist/Review/4776944

LOXAHATCHEE RIVER ENVIRONMENTAL CONTROL DISTRICT BID

Bid # 21-008-00107-WWSH

BID RESPONSE

The Contractor agrees to execute an Agreement in strict accordance with the Contract Documents and perform the work as follows:

The capture, hauling and proper disposal of liquid and/or slurry wastewater including fats, oil and grease (FOG), sand and debris, up to 2,000 gallons, to a Florida Department of Environmental Protection and/or Florida Department of Health approved disposal site.

For compensation in the amount of:

$ 421.89 /load

Four Hundred Twenty-One dollars Eighty-Nine cents / load

(written in words)

All unit prices bid should be within two (2) decimal points. If bidder's pricing exceeds two (2) decimal points, Purchasing reserves the right to round up or down accordingly.

Is Bidder's Qualification information included? YES; INITIAL

Is Proof of ability to provide insurance provided? YES; INITIAL

Is Business License provided? YES; INITIAL

BIDDER'S FIRM NAME: Raider Rooter

BIDDER'S SIGNATURE:

(Failure to sign by a duly authorized representative shall result in rejection of this bid)

By signature on this document, bidder acknowledges and agrees that its offer includes and accepts all terms, conditions, and specifications of the LRECD's bid solicitation as originally published, without exception, change or alteration of any kind, except as may have been published by the LRECD in official amendments prior to this date of submittal.

FIRM ADDRESS: 525 Gator Drive, Lantana, FL 33462

FIRM TELEPHONE NUMBER: 561-737-8818

FIRM E-MAIL ADDRESS: office@RaiderRooter.com

APPLICABLE LICENSE(S): CFC1430554

FIRM FEDERAL ID #: 81-0725775

DRUG-FREE WORKPLACE CERTIFICATION for BID #21-008-00107WWSH

IDENTICAL TIE BIDS/PROPOSALS - In accordance with F.S 287.087, a preference shall be given to vendors submitting with their bids/proposals the following certification that they have implemented a drug-free workplace program which meets the requirements of F.S. 287.087. In the event tie bids are received from vendors who have not submitted with their bids/proposals a completed Drug-Free Workplace Certification form, the award will be made in accordance with LRECD's Procurement Policy pertaining to tie bids.

This Drug-Free Workplace Certification form must be executed and returned with the attached bid/proposal and received on or before time of bid opening to be considered. The failure to execute and/or return this certification shall not cause any bid/proposal to be deemed non-responsive.

Whenever two (2) or more bids/proposals which are equal with respect to price, quality, and service are received by Loxahatchee River Environmental Control District for the procurement of commodities or contractual services, a bid/proposal received from a business that certifies that it has implemented a drug-free workplace program shall be given preference in the award process. In order to have a drug-free workplace program, a business shall:

(1) Publish a statement notifying employees that the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance is prohibited in the workplace and specifying the actions that will be taken against employees for violations of such prohibition.

(2) Inform employees about the dangers of drug abuse in the workplace, the business's policy of maintaining a drug-free workplace, any available drug counseling, rehabilitation, and employee assistance programs, and the penalties that may be imposed upon employees for drug abuse violations.

(3) Give each employee engaged in providing the commodities or contractual services that are under bid a copy of the statement specified in number (1).

(4) In the statement specified in number (1), notify the employees that, as a condition of working on the commodities or contractual services that are under bid, the employee will abide by the terms of the statement and will notify the employer of any conviction of, or plea of guilty or nolo contendere to, any violation of F.S. 893, or of any controlled substance law of the United States or any state, for a violation occurring in the workplace no later than five (5) days after such conviction.

(5) Impose a sanction on or require the satisfactory participation in a drug abuse assistance or rehabilitation program for any convicted employee.

(6) Make a good faith effort to continue to maintain a drug-free workplace through implementation F.S. 287.087.

THIS CERTIFICATION is submitted by Andrew Bloom (the Individual's Name)

Owner of Rinder Cooter

(Title/Position with Company/Vendor) (Name of Company/Vendor) who does hereby certify that said Company/Vendor has implemented a drug-free workplace program which meets the requirements of F.S. 287.087, which are identified in numbers (1) through (6) above.

Ron DeSantis, Governor

Melanie S. Griffin, Secretary

STATE OF FLORIDA
DEPARTMENT OF BUSINESS AND PROFESSIONAL REGULATION

CONSTRUCTION INDUSTRY LICENSING BOARD

THE PLUMBING CONTRACTOR HEREIN IS CERTIFIED UNDER THE
PROVISIONS OF CHAPTER 489, FLORIDA STATUTES

LERMAN, MICHAEL A

RAIDER ROOTER
804 SOUTHEAST 1ST STREET SUITE A
BOYNTON BEACH FL 33435

LICENSE NUMBER: CFC1430554

EXPIRATION DATE: AUGUST 31, 2024

Always verify licenses online at MyFloridaLicense.com

Do not alter this document in any form.

This is your license. It is unlawful for anyone other than the licensee to use this document.

LOXAHATCHEE RIVER DISTRICT
2500 JUPITER PARK DRIVE, JUPITER, FLORIDA 33458 TEL: (561) 747-5700 FAX: (561) 747-9929
D. Albrey Arrington, Ph.D. EXECUTIVE DIRECTOR loxahatcheeriver.org

MEMORANDUM

To: Governing Board
From: Kara Fraraccio, Director of Finance and Administration
Date: September 9, 2022
Subject: Authorize FY2023 Open Purchase Order to Home Depot

In accordance with the District's Procurement Policy, Board approval is required for an Open Purchase Order when aggregate fiscal year spending for a vendor is anticipated to exceed $50,000.

Staff is requesting Board consideration and approval of an Annual Open Purchase Order to be issued to Home Depot in the amount of $60,000. Purchases made against this Annual Open Purchase Order will be for various maintenance, repair, operating supplies, industrial supplies and related products (nuts, bolts, saw blades, ant killer, concrete, bagged lime, etc.) totaling less than $500. Purchases will be made utilizing the OMNIA Partners contract 16154 and 170009.

The Open Purchase Order was budgeted in fiscal year 2023. All individual purchases under the Open Purchase Order will be completed in accordance with the District's Procurement Policy. The Open Purchase Order amount is based on historical spending trends.

The following motion is suggested for approval:

"THAT THE DISTRICT GOVERNING BOARD authorize the Executive Director to execute an annual Open Purchase Order to Home Depot at a total cost not to exceed $60,000 for maintenance, repair, operating supplies, industrial supplies, and related products, in accordance with the District Procurement Policy."

LOXAHATCHEE RIVER DISTRICT
2500 JUPITER PARK DRIVE, JUPITER, FLORIDA 33458 TEL: (561) 747-5700 FAX: (561) 747-9929
D. Albrey Arrington, Ph.D. EXECUTIVE DIRECTOR loxahatcheeriver.org

MEMORANDUM

TO: D. Albrey Arrington, Ph.D., Executive Director

FROM: Kris Dean, P.E., Deputy Executive Director/Director of Engineering Services

DATE: September 8, 2022

SUBJECT: ITB # 19-008LPSSGENCONSTR - Low Pressure Sewer System General Construction Services: Contract Renewal

As we work to complete neighborhood sewering we frequently have small and mid-sized projects requiring construction of low pressure infrastructure to serve remnant areas. To address these areas in a timely and efficient manner we use a general construction services contract.

In September, 2019, the District awarded contract ITB # 19-008LPSSGENCONSTR to Lazarus Group, Inc. for general construction services. The contract term was for 2 years with the option for 3 additional 12-month extensions.

In accordance with the original contract, the contractor has requested an extension of the contract with consideration of a CPI-U adjustment to prices as presented in the attached Bid Tab.

The Lazarus Group, Inc. has satisfactorily performed numerous jobs under this contract and staff are satisfied with the coordination and performance of the contractor. As such, it is recommended that the District renew contract ITB # 19-008LPSSGENCONSTR with Lazarus Group, Inc. for the second 12-month extension.

The following motion is offered for the Governing Board's consideration:

"THAT THE DISTRICT GOVERNING BOARD authorize the Executive Director to execute an extension of contract ITB#19-008LPSSGENCONSTR with The Lazarus Group, Inc. to September 30, 2023 in an amount not to exceed $100,000 inclusive of adjustment to unit prices in accordance with a CPI-U increase of 9.1 %"

From:	jay hoffer
To:	Kris Dean; Bob Hoffer
Subject:	Low Pressure Sewer System General Construction Service Renewal
Date:	Thursday, September 8, 2022 3:49:20 PM
Attachments:	Scan_20220908.pdf

Kris,
I have reviewed the pricing structure and in agreement with the new prices.

Thank You
Bob Hoffer

Low Pressure Sewer System General Construction Services - ITB #19-008LPSSGENCONDTR

UNIT PRICE BID TAB

				2019	2021	2023
				Lazarus Group		
NO.	ITEM	QUANTITY	UNIT	PRICE/UNIT	Adj. 5.4%	Adj. 9.1%
1	Directional Drill up to 3" LP Force Main					
	First 10 LF	1	LS	$700.00	$737.80	$804.94
	Each Additional Foot	75	LF	$14.00	$14.76	$16.10
2	Direct Bury up to 3" LP Force Main Less Than or Equal to 48" Depth					
	First 10 LF	1	LS	$120.00	$126.48	$137.99
	Each Additional Foot	750	LF	$10.50	$11.07	$12.07
3	Direct Bury up to 3" LP Force Main Greater Than 48" Depth					
	First 10 LF	1	LS	$120.00	$126.48	$137.99
	Each Additional Foot	10	LF	$12.00	$12.65	$13.80
4	Pneumatic Mole up to 3" LP Force Main					
	First 10 LF	1	LS	$140.00	$147.56	$160.99
	Each Additional Foot	10	LF	$14.00	$14.76	$16.10
5	Core Existing Shallow Manhole and Install up to 3" LP Force Main	1	EA	$320.00	$337.28	$367.97
6	Core Existing Deep Manhole and Install up to 3" LP Force Main	1,121	LF	$420.00	$442.68	$482.96
7	Connect up to 2-1/2" LP Force Main to existing 4" - 12" Force Main Less Than or Equal to 48" Depth					
	4"	1	EA	$450.00	$474.30	$517.46
	6"	1	EA	$450.00	$474.30	$517.46
	8"	1	EA	$450.00	$474.30	$517.46
	10	1	EA	$450.00	$474.30	$517.46
	12	1	EA	$450.00	$474.30	$517.46
8	Additional Added to Item 7 for Greater Than 48" Depth	1	EA	$100.00	$105.40	$114.99
9	Additional Added to Item 7 for Connection of 3" LP Force Mains	1	EA	$100.00	$105.40	$114.99
10	Standard Singe Service					
	Short	1	EA	$1,037.00	$1,093.00	$1,192.46
	Long	1	EA	$1,274.00	$1,342.80	$1,464.99
11	2"Single Service					
	Short	1	EA	$1,237.00	$1,303.80	$1,422.44
	Long	1	EA	$1,474.00	$1,553.60	$1,694.97
12	Double Service					
	Short	1	EA	$1,354.00	$1,427.12	$1,556.98
	Long	1	EA	$1,487.00	$1,567.30	$1,709.92
13	Connect New Service to an Existing LP Force Main	1	EA	$377.00	$397.36	$433.52
14	Terminal End Flushing Port	1	EA	$870.00	$916.98	$1,000.43
15	In-line Flushing Port	1	EA	$1,500.00	$1,581.00	$1,724.87
16	Air/Vacuum Valve	1	EA	$2,000.00	$2,108.00	$2,299.83
17	Isolation Valve	1	EA	$800.00	$843.20	$919.93
18	Sod/Seed and Mulch					
	Bahia Sod	100	SY	$0.20	$0.21	$0.23
	St.Augustine Sod	100	SY	$0.20	$0.21	$0.23
	FDOT Seed and Mulch	100	SY	$0.20	$0.21	$0.23
19	Open Cut Road Repair	15	SY	$125.00	$131.75	$143.74
20	Mill and Overlay					
	Less than 50SY per Mobilization	49	SY	$80.00	$84.32	$91.99
	50 or more per Mobilization	50	SY	$55.00	$57.97	$63.25
21	Concrete Driveway Restoration	5	SY	$48.00	$50.59	$55.20
22	Asphalt Sidewalk Restoration	5	SY	$38.00	$40.05	$43.70
23	Concrete Driveway Restoration	10	SY	$49.00	$51.65	$56.35
24	Dewatering w/Wellpoints					
	First Day	1	EA	$600.00	$632.40	$689.95
	Each Additional Day	1	EA	$70.00	$73.78	$80.49
25	4" SCH40 Casing by Direct Bury	20	LF	$16.00	$16.86	$18.40
26	4" SCH40 Casing by Pneumatic Mole	20	LF	$30.00	$31.62	$34.50

Lazarus Group
Received & Approved
Date: 9/8/22
Sign:

LOXAHATCHEE RIVER DISTRICT
2500 JUPITER PARK DRIVE, JUPITER, FLORIDA 33458 TEL: (561) 747-5700 FAX: (561) 747-9929

D. Albrey Arrington, Ph.D. EXECUTIVE DIRECTOR loxahatcheeriver.org

MEMORANDUM

To: D. ALBREY ARRINGTON, Ph.D., Executive Director
FROM: JASON A. PUGSLEY, P.E., Operations – Plant Manager
DATE: SEPTEMBER 9, 2022
SUBJECT: FISCAL YEAR 2023 – ANNUAL PURCHASE ORDER AUTHORIZATION FOR EVOQUA ODOR CONTRACT PRICING EXTENSION

The amount included in the District's FY 2023 budget is sufficient to cover the amount of this request.

Evoqua Water Technologies, Inc. (Evoqua) supplies the District with chemicals and equipment that assists with odor control and/or corrosion control at our plant site and within the collection system. Evoqua has an executed contract in place with Lee County and previously extended the offer to the District to "piggy-back" the executed Lee County contract for our wastewater odor and corrosion control program. The Lee County contract included an initial three-year period which was effective May 14, 2018 through May 13, 2021. Lee County previously elected to execute the second of three possible one-year extensions. The Year 2 extension has a term of May 14, 2022 through May 13, 2023.

Lee County utilizes a significant amount of chemicals and equipment through Evoqua. As such, the pricing offered under the current contract provides the District with a competitive pricing advantage when compared to the pricing the District would likely receive if we were to bid the items ourselves. The current authorization request is through May 13, 2023. If and when Lee County exercises the third one-year renewal term, Staff will prepare and submit a separate authorization to cover the anticipated expenses for the remainder of FY2023 (i.e., May 14, 2023, through September 30, 2023).

It should be noted that there is no increase in the unit costs from the current approved contract.

Staff recommends the following motion:

"THAT THE DISTRICT GOVERNING BOARD authorize the Executive Director to execute a purchase order to Evoqua Water Technologies, Inc. for the continued supply of odor and corrosion control chemicals and services, in accordance with a "piggy-back" of Lee County contract for the period from October 1, 2022 through May 13, 2023, in an amount Not-to-Exceed $174,000".

May 5, 2022

Jason A. Pugsley, P.E.
Loxahatchee River District
2500 Jupiter Park Drive
Jupiter, FL 33458-8964
Email: Jason.pugsley@lrecd.org

RE: LEE COUNTY CONTRACT – RENEWAL #2
LOXAHATCHEE RIVER DISTRICT

Dear Mr. Pugsley:

First, let me thank you again for your continued interest in Evoqua Water Technologies and for your confidence in our ability to solve your hydrogen sulfide odor and corrosion control needs.

Evoqua Water Technologies will continue to offer the Lee County Contract Piggyback for the period of May 14, 2022 through May 13, 2023.

Under the Lee County contract, the pricing for the products and services you are currently using are as follows.

Bioxide®:	**$ 2.69 per gallon**
Sodium Hydroxide 25%:	**$ 3.99 per gallon**
Sodium Hypochlorite:	**$ 2.75 per gallon**
Master Lift Station Biofilter:	**$ 3,354 per month**
WWTF Headworks Biofilter:	**$ 4,408 per month**

Terms and conditions of the existing Lee County contract shall apply. These prices do not include any applicable taxes.

Please NOTE: Effective April 2022, you may be assessed a 3% fee if paying via Credit Card. Find more info on our website here > https://www.evoqua.com/en/about-us/terms-conditions-sale-products-services/credit-card-fee-faqs . Ask us how to avoid paying fees by migrating to ACH CTX payment type.

Thank you again for the opportunity to be of service. We look forward to continuing to serve Loxahatchee River District in the years to come. If you have any questions regarding this information or if I can be of assistance in any way, please do not hesitate to call me at (951) 326-7415.

Sincerely,

Evoqua Water Technologies LLC

Eric Hansen

Eric Hansen - Technical Sales Representative

Item 5O

Solids Dewatering Polymer (SNF Polydyne) Purchase –
will be provided when it is available

LOXAHATCHEE RIVER DISTRICT
2500 JUPITER PARK DRIVE, JUPITER, FLORIDA 33458 TEL: (561) 747-5700 FAX: (561) 747-9929
D. Albrey Arrington, Ph.D. EXECUTIVE DIRECTOR loxahatcheeriver.org

MEMORANDUM

To: Governing Board
From: Kara Fraraccio, Director of Finance and Administration
Date: September 9, 2022
Subject: Disposal of Surplus Property

Whenever the District disposes of tangible personal property of a non-consumable nature, Florida Statutes and our Disposal of Surplus Tangible Personal Property Policy require Governing Board approval before any Surplus Tangible Personal Property can be disposed of. Therefore, consistent with state statute and our policies and procedures, I request your authorization to dispose of the items listed below:

Tag #	F/A #	Description	Condition	Date Recorded	Acquired Value	Book Value	Estimated Value
2703		Dell UPS	Not Operational	09/30/12	$ 170	$ -	$ -
Total Assets to be Disposed					**$ 170**	**$ -**	**$ -**

In addition, the following assets were aggregated with other assets or grouped as part of a project when purchased and we therefore do not have individualized asset information on each item. A description of the asset to be disposed is provided below:

Description	Serial Number	Condition	Estimated Value
2 HP Barnes Pump	C1602701-1012	Beyond Repair	$0
2 HP Barnes Pump	SGVF2022L/C1616238	Beyond Repair	$0
3 HP Flygt Pump	FLY-0641425	Beyond Repair	$0
3 HP Flygt Pump	FLY-8670519	Beyond Repair	$0
3 HP Flygt Pump	FLY-8670521	Beyond Repair	$0
3 HP Flygt Pump	FLY-9481071	Beyond Repair	$0
5 HP Flygt Pump	FLY-8980275	Beyond Repair	$0
5 HP Flygt Pump	FLY-9030168	Beyond Repair	$0
5 HP Hydromatic	SPGH500M3-2/G65933	Beyond Repair	$0
ANI Pump	106000231	Beyond Repair	$0
Flygt Pump	222371	Beyond Repair	$0
Flygt Pump	10-27-98-3140	Beyond Repair	$0
Flygt Pump	FLY-981609	Beyond Repair	$0

The items listed in the schedule above are no longer of use to the District and are considered Surplus. The assets will be disposed of in accordance with the District's Disposal of Surplus Tangible Personal Property Policy. Items slated for disposal have no remaining value and will be recycled or otherwise disposed of in an environmentally conscious manner. If you have any questions, please feel free to contact me.

I offer the following motion for your approval:

> **"THAT THE GOVERNING BOARD authorize the Executive Director to dispose of tangible personal property asset tag number 2703, and the items from aggregated assets listed in the schedule above in accordance with the District's Disposal of Surplus Tangible Personal Property Policy."**

Change Orders

No Change Orders are presented for Board consideration this month.

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2500 JUPITER PARK DRIVE, JUPITER, FLORIDA 33458 TEL: (561) 747-5700 FAX: (561) 747-9929

D. Albrey Arrington, Ph.D. EXECUTIVE DIRECTOR loxahatcheeriver.org

MEMORANDUM

TO: GOVERNING BOARD
FROM: D. ALBREY ARRINGTON, Ph.D.
DATE: SEPTEMBER 9, 2022
SUBJECT: FISCAL YEAR 2023 – BUDGET APPROVAL

This month we seek your approval of the final draft Fiscal Year 2023 (FY23) Budget, which is provided following this memo. Following this page, you will find the budget resolution, a high-level budget summary, and the complete draft budget.

We will hold a Public Hearing at 6:56 pm on Thursday, September 15, 2022 (prior to the regular Board Meeting) during which members of the public may provide comment on the proposed budget. During the regular Board Meeting, following the Public Hearing, you will vote on Resolution Number 2022-07, which is attached following this page and included within the proposed FY2023 Budget. Approval of Resolution No. 2022-07 will result in adoption of the Fiscal Year 2023 Budget.

The proposed Budget includes the following [% increase from FY2022]:

$18,835,976	Operating Expenses	[10.7% increase]
$ 4,940,000	Capital Improvements	[9.1% decrease]
$ 7,801,414	Renewal & Replacement	[52.8% increase]
$31,577,390	Total	[14.6% increase]

This month our operating expenses increased by $6,500 due to increased chlorine costs (see Jason's chlorine memo under Tab 5I) – fortunately we were able to find savings in other areas to cover most of this increase. This month our Capital Improvements decreased by $690,800 due primarily to revised scheduling of costs (these costs will be incurred in the subsequent fiscal year). This month our Renewal & Replacement line increased by $376,519. As we have discussed, the costs of several significantly delayed purchases (e.g., new vacuum truck) and projects (e.g., BLM house renovations, gravity system lining, injection well pump station emergency generator connections) from this fiscal year have been moved the current fiscal year to next fiscal year. These delayed costs account for all of the increase in our renewal and replacement budget category relative to last year's budget amount.

I believe this budget balances fiscal conservatism with systematic, proactive efforts to achieve our mission (*protecting public health and preserving the Loxahatchee River watershed and its natural habitats through innovative wastewater solutions, research, and environmental stewardship.*).

I am pleased to offer the following motion for your consideration:

"THAT THE GOVERNING BOARD approve Resolution 2022-07 adopting the Loxahatchee River Environmental Control District's annual budget for the 2023 Fiscal Year."

Resolution No. 2022-07

WHEREAS, under the provisions of Section 189.016, Florida Statutes, the proposed annual budget for the Loxahatchee River Environmental Control District has been submitted this 15th day of September, 2022.

WHEREAS, under the provisions of Section 189.015, Florida Statutes, a public hearing on the proposed budget has been held and notice thereof having been published in one issue of the Palm Beach Post, a newspaper of general circulation in the District, more than five days before such hearing; and

WHEREAS, all necessary changes have been made as to revenue estimates and expenditures.

NOW, THEREFORE, BE IT RESOLVED by the Governing Board of the Loxahatchee River Environmental Control District that the budget for fiscal year ending September 30, 2023, a copy of which is hereto attached and made a part of this resolution as fully as if set forth verbatim herein, is hereby approved and adopted:

REVENUES		
Operating Revenue	$	20,540,265
Capital Revenue		2,702,000
Nonoperating Revenue		560,700
Carryforward of Surplus from Prior Years		7,774,425
TOTAL REVENUES	$	31,577,390
EXPENSES		
Operating Expenses	$	18,835,976
Capital Improvements		4,940,000
Renewal and Replacement		7,801,414
TOTAL EXPENSES	$	31,577,390

This Resolution adopted by the Governing Board of the Loxahatchee River Environmental Control District on this 15th day of September, 2022.

_____ Vote:_____ _____ Vote:_____
James Snyder, Chairman Dr. Matt Rostock, Vice Chairman

_____ Vote:_____ _____ Vote:_____
Stephen B. Rockoff, Treasurer Gordon Boggie, Secretary

Loxahatchee River Environmental Control District

Annual Budget

For the Fiscal Year Ending September 30, 2023

Prepared by:
Finance Department

Governing Board Members

James D. Snyder	Chairman
Dr. Matt H. Rostock	Vice Chairman
Stephen B. Rockoff	Treasurer
Gordon M. Boggie	Secretary

Department Directors

D. Albrey Arrington, Ph.D.	Executive Director
Kris Dean, PE	Deputy Executive Director/ Director of Engineering
Kara D. Fraraccio, CPA	Director of Finance and Administration
Kenneth Howard	Director of Information Services
Jason A. Pugsley, PE	Plant Manager

Consultants

Curtis Shenkman, P.A.	Legal Counsel
Nowlen, Holt & Miner, P.A.	Independent Auditors

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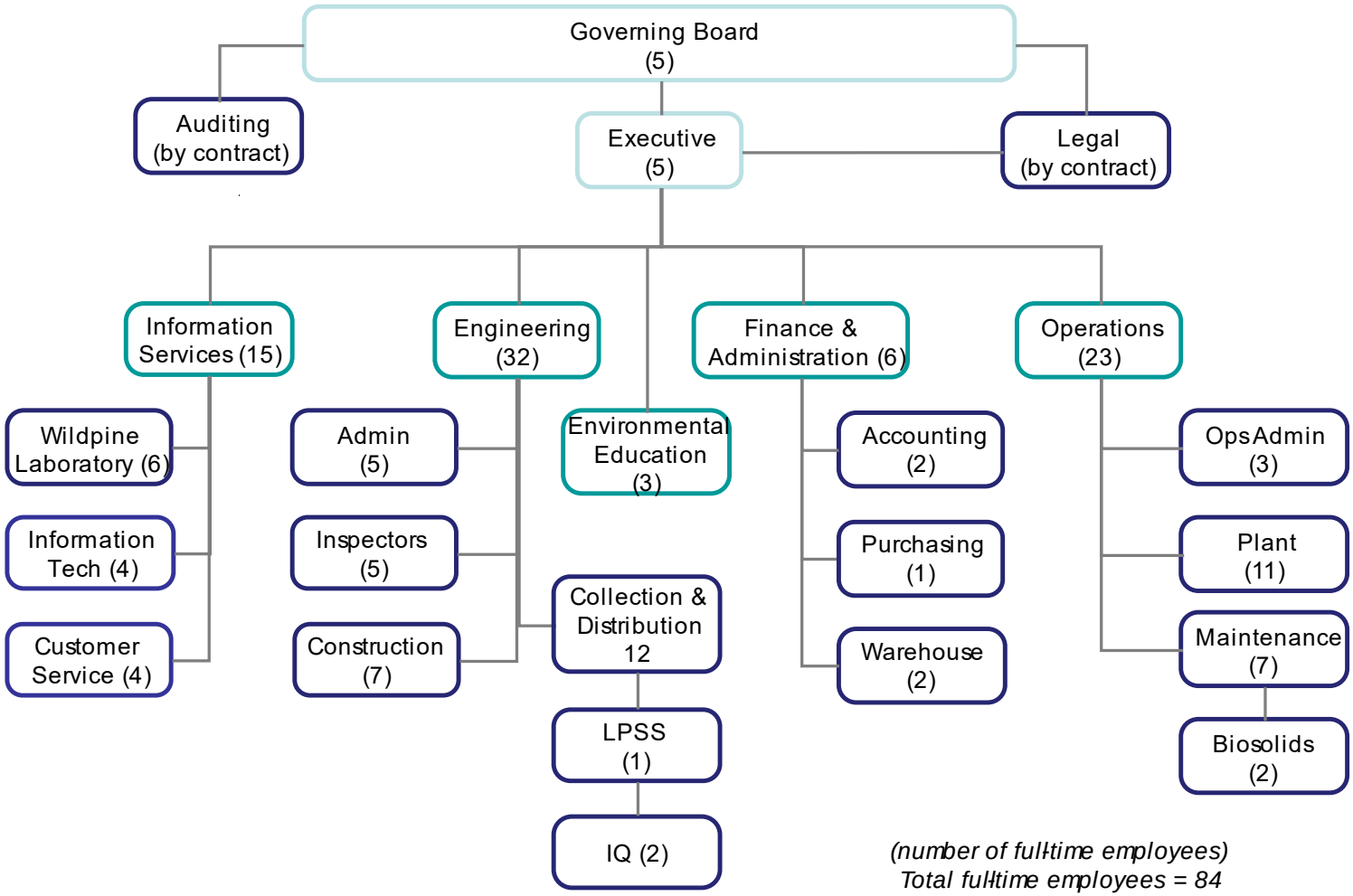
This Resolution adopted by the Governing Board of the Loxahatchee River Environmental Control District on this 15th day of September, 2022.

_____	Vote:_____	_____	Vote:_____
James Snyder, Chairman		Dr. Matt Rostock, Vice Chairman	
_____	Vote:_____	_____	Vote:_____
Stephen B. Rockoff, Treasurer		Gordon Boggie, Secretary	

LRD Organizational Chart



(number of full-time employees)
Total full-time employees = 84

2021-8-10

Budget Summary

	FY 2022 Budget	FY 2023 Budget	Percent Change
Revenues			
Operating Revenues			
Regional Sewer Service	$ 17,100,000	$ 17,501,000	2.35%
IQ Water Charges	2,326,000	2,352,000	1.12%
Standby Sewer Service	73,000	108,000	47.95%
Administration and Engineering Fees	38,000	63,000	65.79%
Other Revenue	424,490	516,265	21.62%
Subtotal Operating Revenues	19,961,490	20,540,265	2.90%
Capital Revenues			
Line Charges	287,000	465,000	62.02%
Assessments	1,188,997	1,411,000	18.67%
Plant Charges	898,000	686,000	-23.61%
Capital Contributions	800,000	140,000	-82.50%
Subtotal Capital Revenues	3,173,997	2,702,000	-14.87%
Other Revenues			
Interest Income	613,000	560,700	-8.53%
Carryforward of Surplus from Prior Years	3,806,606	7,774,425	104.24%
Total Revenues	$ 27,555,093	$ 31,577,390	14.60%
Expenses			
Operating Expenses (by category)			
Salaries and Wages	$ 6,522,000	$ 7,381,800	13.18%
Payroll Taxes	470,200	530,500	12.82%
Retirement Contributions	946,800	1,107,000	16.92%
Employee Health Insurance	1,558,400	1,542,500	-1.02%
Workers' Compensation Insurance	73,700	77,800	5.56%
General Insurance	374,995	423,520	12.94%
Supplies and Expenses	1,036,285	1,105,382	6.67%
Utilities	1,407,908	1,555,116	10.46%
Chemicals	503,000	634,000	26.04%
Repairs and Maintenance	1,858,362	1,940,780	4.43%
Outside Services	2,040,930	2,312,578	13.31%
Contingency	225,000	225,000	0.00%
Subtotal Operating Expenses	17,017,580	18,835,976	10.69%
Capital			
Capital Improvements	5,433,013	4,940,000	-9.07%
Renewal and Replacement	5,104,500	7,801,414	52.83%
Subtotal Capital	10,537,513	12,741,414	20.91%
Total Expenses	$ 27,555,093	$ 31,577,390	14.60%
Excess Revenues Over (Under) Expenses	$ -	$ -	

Executive Department 40-10

Account	Description		FY 2023 Budget
Personal Services			
512000	Salaries and Wages	$	674,800
514000	Overtime		1,000
521000	Payroll Taxes		38,900
522000	Retirement Contributions		108,600
523000	Life, Health, and Dental Insurance		109,100
524000	Workers Compensation Insurance		3,700
Subtotal		$	936,100
Operating Expenses			
534000	Other Contractual Services	$	30,350
540000	Travel and Per Diem		16,200
541000	Communications		27,440
542000	Freight and Postage		10,000
543000	Utility Services		1,000
545000	Insurance		26,950
546000	Repair and Maintenance - General		63,525
546100	Repair and Maintenance - Vehicles		1,000
551000	Office Supplies		2,500
552000	Operating Supplies		39,020
552200	Fuel, Diesel, Oil		3,250
554000	Books, Publications, Memberships, and Subscriptions		47,305
555000	Training and Education		9,125
Subtotal		$	277,665
Total		**$**	**1,213,765**

Personnel Schedule	FY 2023 FTE
Executive Director	1.0
Deputy Executive Director/Director of Engineering	1.0
Executive Secretary	1.0
Human Resource Generalist	1.0
Safety Officer	1.0
Total	**5.0**

Professional Services Department 40-20

Account	Description		FY 2023 Budget
Operating Expenses			
531100	Engineering	$	20,000
531200	Engineering Support Services		50,000
531300	Legal Expense - Non-Litigation		75,000
531400	Legal Expense - Litigation		60,000
531500	Legal Expense - Collections		5,000
531600	Pension Advisor		30,000
531700	Human Resource Law		9,000
531800	Investment Advisor		5,000
532100	Audit Services		35,800
Subtotal		$	289,800
Total		**$**	**289,800**

Personnel Schedule	FY 2023 FTE

Finance Department 40-30

Account	Description		FY 2023 Budget
Personal Services			
512000	Salaries and Wages	$	539,100
514000	Overtime		5,000
521000	Payroll Taxes		39,800
522000	Retirement Contributions		87,700
523000	Life, Health, and Dental Insurance		122,200
524000	Workers Compensation Insurance		2,600
Subtotal		$	796,400
Operating Expenses			
534000	Other Contractual Services	$	34,023
541000	Communications		2,500
546000	Repair and Maintenance - General		5,000
549500	Tax Collector Fees and Discounts		82,370
551000	Office Supplies		1,000
552000	Operating Supplies		13,280
554000	Books, Publications, Subscriptions, and Memberships		8,670
555000	Training and Education		3,090
Subtotal		$	149,933
Total		**$**	**946,333**

Personnel Schedule	FY 2023 FTE
Director of Finance and Administration	1.0
Accountant II	1.0
Accountant I	1.0
Purchasing Agent	1.0
Warehouse Coordinator	2.0
Total	**6.0**

Public Education Department 40-40

Account	Description	FY 2023 Budget
Personal Services		
512000	Salaries and Wages	$ 196,200
513000	Other Salaries and Wages	122,400
514000	Overtime	10,000
521000	Payroll Taxes	24,700
522000	Retirement Contributions	33,900
523000	Life, Health, and Dental Insurance	49,300
524000	Workers Compensation Insurance	300
Subtotal		$ 436,800
Operating Expenses		
531000	Professional Services	$ 1,700
534000	Other Contractual Services	10,035
541000	Communications	1,400
543000	Utility Services	28,000
545000	Insurance	16,450
546000	Repair and Maintenance - General	53,875
546100	Repair and Maintenance - Vehicles	5,000
546300	Repair and Maintenance - Structures and Grounds	6,500
547000	Printing and Publications	1,500
552000	Operating Supplies	91,160
552200	Fuel, Diesel, Oil	750
555000	Training and Education	5,200
Subtotal		$ 221,570
Total		**$ 658,370**

Personnel Schedule	FY 2023 FTE
Environmental Education Manager	1.0
Environmental Education Coordinator	1.0
Community Outreach Coordinator	1.0
Total	**3.0**

WildPine Lab Department 40-41

Account	Description		FY 2023 Budget
Personal Services			
512000	Salaries and Wages	$	659,100
513000	Other Salaries and Wages		24,000
514000	Overtime		10,000
521000	Payroll Taxes		49,700
522000	Retirement Contributions		109,200
523000	Life, Health, and Dental Insurance		106,800
524000	Workers Compensation Insurance		8,300
Subtotal		$	967,100
Operating Expenses			
531000	Professional Services	$	55,000
534000	Other Contractual Services		5,700
541000	Communications		2,300
545000	Insurance		4,120
546000	Repair and Maintenance - General		2,200
546100	Repair and Maintenance - Vehicles		13,000
546200	Repair and Maintenance - Equipment		24,500
552000	Operating Supplies		75,000
552200	Fuel, Diesel, Oil		3,000
555000	Training and Education		1,000
Subtotal		$	185,820
Total		**$**	**1,152,920**

Personnel Schedule	FY 2023 FTE
Director of Information Services	1.0
Lab Manager	1.0
Senior Scientist	1.0
Lab Technician II	3.0
Lab Technician I	1.0
Total	**7.0**

Customer Service Department 40-42

Account	Description		FY 2023 Budget
Personal Services			
512000	Salaries and Wages	$	218,400
514000	Overtime		1,000
521000	Payroll Taxes		16,400
522000	Retirement Contributions		28,800
523000	Life, Health, and Dental Insurance		38,700
524000	Workers Compensation Insurance		300
Subtotal		$	303,600
Operating Expenses			
534000	Other Contractual Services	$	133,000
542000	Freight and Postage		65,000
552000	Operating Supplies		11,500
554000	Books, Publications, Subscriptions, and Memberships		22,537
Subtotal		$	232,037
Total		**$**	**535,637**

Personnel Schedule	FY 2023 FTE
Customer Service Rep II	2.0
Customer Service Rep I	2.0
Total	**4.0**

Information Technology Department 40-43

Account	Description		FY 2023 Budget
Personal Services			
512000	Salaries and Wages	$	280,500
514000	Overtime		500
521000	Payroll Taxes		20,500
522000	Retirement Contributions		39,800
523000	Life, Health, and Dental Insurance		84,800
524000	Workers Compensation Insurance		300
Subtotal		$	426,400
Operating Expenses			
531000	Professional Services	$	105,000
534000	Other Contractual Services		1,500
541000	Communications		2,400
546000	Repair and Maintenance - General		1,500
552000	Operating Supplies		16,500
554000	Books, Publications, Memberships, and Subscriptions		5,500
555000	Training and Education		5,000
Subtotal		$	137,400
Total		**$**	**563,800**

Personnel Schedule	FY 2023 FTE
IT Manager	1.0
Application Support Administrator	1.0
IT Help Desk	2.0
Total	**4.0**

Engineering and Inspection Department 40-50

Account	Description		FY 2023 Budget
Personal Services			
512000	Salaries and Wages	$	835,200
513000	Other Salaries and Wages		15,000
514000	Overtime		10,000
521000	Payroll Taxes		63,500
522000	Retirement Contributions		128,900
523000	Life, Health, and Dental Insurance		220,800
524000	Workers Compensation Insurance		8,400
Subtotal		$	1,281,800
Operating Expenses			
540000	Travel and Per Diem	$	3,000
541000	Communications		9,800
546000	Repair and Maintenance - General		14,600
546100	Repair and Maintenance - Vehicles		7,500
546200	Repair and Maintenance - Equipment		5,000
552000	Operating Supplies		28,700
552200	Fuel, Diesel, Oil		27,600
555000	Training and Education		6,000
Subtotal		$	102,200
Total		**$**	**1,384,000**

Personnel Schedule	FY 2023 FTE
District Engineer	1.0
Chief Construction Inspector	1.0
Construction Inspector	2.0
Compliance Technician	1.0
Utility Locate and Compliance Technician	2.0
Engineering/GIS Tech	1.0
Engineering Assistant	1.0
Projects Coordinator	1.0
Total	**10.0**

Construction Department 40-51

Account	Description		FY 2023 Budget
Personal Services			
512000	Salaries and Wages	$	499,000
514000	Overtime		11,500
521000	Payroll Taxes		37,400
522000	Retirement Contributions		64,700
523000	Life, Health, and Dental Insurance		145,500
524000	Workers Compensation Insurance		7,900
Subtotal		$	766,000
Operating Expenses			
541000	Communications	$	5,800
546000	Repair and Maintenance - General		5,000
546100	Repair and Maintenance - Vehicles		25,000
546200	Repair and Maintenance - Equipment		10,000
552000	Operating Supplies		23,000
552200	Fuel, Diesel, Oil		18,000
555000	Training and Education		5,000
Subtotal		$	91,800
Total		**$**	**857,800**

Personnel Schedule	FY 2023 FTE
Construction Manager	1.0
Construction Coordinator	1.0
Construction System Foreman	1.0
Construction System Operator B	1.0
Construction System Operator C	2.0
Construction System Operator Trainee	1.0
Total	**7.0**

Operations Administrative Department 50-10

Account	Description		FY 2023 Budget
Personal Services			
512000	Salaries and Wages	$	348,100
514000	Overtime		1,000
521000	Payroll Taxes		22,600
522000	Retirement Contributions		48,700
523000	Life, Health, and Dental Insurance		53,500
524000	Workers Compensation Insurance		3,200
Subtotal		$	477,100
Operating Expenses			
531000	Professional Services	$	20,000
534000	Other Contractual Services		8,100
540000	Travel and Per Diem		2,500
541000	Communications		24,660
542000	Freight and Postage		2,500
545000	Insurance		376,000
546000	Repair and Maintenance - General		103,070
551000	Office Supplies		3,000
552000	Operating Supplies		31,850
552800	Operating Supplies - Safety		33,400
554000	Books, Publications, Memberships, and Subscriptions		53,525
555000	Training and Education		6,150
Subtotal		$	664,755
Total		**$**	**1,141,855**

Personnel Schedule	FY 2023 FTE
Plant Manager	1.0
IT System Specialist II	1.0
Administrative Assistant	1.0
Total	**3.0**

Collection and Transmission Department 50-40

Account	Description		FY 2023 Budget
Personal Services			
512000	Salaries and Wages	$	955,000
514000	Overtime		135,000
521000	Payroll Taxes		81,300
522000	Retirement Contributions		165,900
523000	Life, Health, and Dental Insurance		204,300
524000	Workers Compensation Insurance		16,300
Subtotal		$	1,557,800
Operating Expenses			
541000	Communications	$	15,900
543000	Utility Services		427,250
544000	Rentals and Leases		45,000
546000	Repair and Maintenance - General		250,000
546100	Repair and Maintenance - Vehicles		110,000
546200	Repair and Maintenance - Equipment		375,000
546300	Repair and Maintenance - Structures and Grounds		75,000
552000	Operating Supplies		97,950
552100	Operating Supplies - Chemicals		160,000
552200	Fuel, Diesel, Oil		45,600
552300	Fuel, Diesel, Oil - Generators		5,000
555000	Training and Education		15,000
Subtotal		$	1,621,700
Total		**$**	**3,179,500**

Personnel Schedule	FY 2023 FTE
Collections System Superintendent	1.0
Collection and Distribution Foreman	1.0
Lead Field Technician	2.0
Collection and Distribution Operator A	4.0
Collection and Distribution Operator C	5.0
Total	**13.0**

Treatment and Disposal Department 50-50

Account	Description		FY 2023 Budget
Personal Services			
512000	Salaries and Wages	$	1,301,100
514000	Overtime		216,900
521000	Payroll Taxes		112,600
522000	Retirement Contributions		245,700
523000	Life, Health, and Dental Insurance		329,300
524000	Workers Compensation Insurance		21,700
Subtotal		$	2,227,300
Operating Expenses			
534000	Other Contractual Services	$	16,000
541000	Communications	$	12,500
543000	Utility Services		588,588
544000	Rentals and Leases		55,000
546000	Repair and Maintenance - General		12,500
546100	Repair and Maintenance - Vehicles		17,000
546200	Repair and Maintenance - Equipment		233,000
546300	Repair and Maintenance - Structures and Grounds		152,010
546600	Repair and Maintenance - Outside Services		113,000
552000	Operating Supplies		220,000
552100	Operating Supplies - Chemicals		4,000
552200	Fuel, Diesel, Oil		30,000
552300	Fuel, Diesel, Oil - Generators		10,000
555000	Training and Education		23,970
Subtotal		$	1,487,568
Total		**$**	**3,714,868**

Personnel Schedule	FY 2023 FTE
Plant Chief Operator	1.0
Plant Maintenance Foreman	1.0
Plant Electrician	3.0
Industrial Pretreatment Coordinator	1.0
Waste Water Treatment Plant Operator A	3.0
Waste Water Treatment Plant Operator B	2.0
Waste Water Treatment Plant Operator C	4.0
Wastewater Treatment Plant Process Analysis Tech	1.0
Plant Maintenance Operator II	1.0
Plant Maintenance Operator I	1.0
Total	**18.0**

Reuse Department 50-60

Account	Description		FY 2023 Budget
Personal Services			
512000	Salaries and Wages	$	161,900
514000	Overtime		7,500
521000	Payroll Taxes		12,600
522000	Retirement Contributions		27,800
523000	Life, Health, and Dental Insurance		39,700
524000	Workers Compensation Insurance		2,600
Subtotal		$	252,100
Operating Expenses			
541000	Communications	$	7,600
543000	Utility Services		319,778
546000	Repair and Maintenance - General		5,000
546100	Repair and Maintenance - Vehicles		5,000
546200	Repair and Maintenance - Equipment		135,000
546300	Repair and Maintenance - Structures and Grounds		25,000
549000	Other Current Charges and Obligations		245,000
552000	Operating Supplies		12,500
552100	Operating Supplies - Chemicals		240,000
552200	Fuel, Diesel, Oil		8,500
555000	Training and Education		2,000
Subtotal		$	1,005,378
Total		**$**	**1,257,478**

Personnel Schedule	FY 2023 FTE
Reuse System Operator A	2.0
Total	**2.0**

Bio-Solids Department 50-80

Account	Description		FY 2023 Budget
Personal Services			
512000	Salaries and Wages	$	130,100
514000	Overtime		12,500
521000	Payroll Taxes		10,500
522000	Retirement Contributions		17,300
523000	Life, Health, and Dental Insurance		38,500
524000	Workers Compensation Insurance		2,200
Subtotal		$	211,100
Operating Expenses			
541000	Communications	$	700
546000	Repair and Maintenance - General		2,000
546100	Repair and Maintenance - Vehicles		7,500
546200	Repair and Maintenance - Equipment		60,500
546300	Repair and Maintenance - Structures and Grounds		17,000
549000	Other Current Charges and Obligations		1,175,000
552000	Operating Supplies		5,000
552100	Operating Supplies - Chemicals		230,000
552200	Fuel, Diesel, Oil		2,500
555000	Training and Education		3,550
Subtotal		$	1,503,750
Total		**$**	**1,714,850**

Personnel Schedule	FY 2023 FTE
Plant Maintenance Operator II	1.0
Plant Maintenance Operator I	1.0
Total	**2.0**

Contingency

Account	Description	FY 2023 Budget
Contingency		
599000	Contingency	$ 225,000
Total		**$ 225,000**
Total Operating Budget		**$ 18,835,976**

Capital Improvement Summary

Description	FY 2022 Budget	FY 2023 Budget	Change
Account			
Contingency	$ 257,013	$ -	$ (257,013)
Land	252,500	129,500	(123,000)
Buildings	500,000	1,100,000	600,000
Improvements Other than Buildings (Infrastructure)	460,000	260,000	(200,000)
Machinery and Equipment	838,000	1,160,000	322,000
Vehicles	830,000	861,519	31,519
Construction in Progress	900,000	1,305,000	405,000
Construction in Progress - Neighborhood Sewering	2,235,000	275,000	(1,960,000)
Construction in Progress - Lift Station	1,700,000	1,450,000	(250,000)
Construction in Progress - Gravity System	1,395,000	3,275,000	1,880,000
Construction in Progress - Force Main	295,000	164,895	(130,105)
Construction in Progress - LPSS	25,000	-	(25,000)
Construction in Progress - Permanent Generator	300,000	365,000	65,000
Construction in Progress - Telemetry	550,000	2,395,500	1,845,500
Total	$ 10,537,513	$ 12,741,414	$ 2,203,901

Executive Department 40-10

Account	Description	FY 2023 Budget
600000	Contingency	$ -
610000	Land	-
620000	Buildings	-
630000	Improvements Other than Buildings (Infrastructure)	-
640000	Machinery and Equipment	-
641000	Vehicles	-
650000	Construction in Progress	-
Total		**$ -**

Finance Department 40-30

Account	Description	FY 2023 Budget
610000	Land	$ -
620000	Buildings	-
630000	Improvements Other than Buildings (Infrastructure)	-
640000	Machinery and Equipment	40,000
641000	Vehicles	-
650000	Construction in Progress	-
Total		**$ 40,000**

Public Education Department 40-40

Account	Description	FY 2023 Budget
610000	Land	$ 127,000
620000	Buildings	850,000
630000	Improvements Other than Buildings (Infrastructure)	-
640000	Machinery and Equipment	-
641000	Vehicles	-
650000	Construction in Progress	-
Total		**$ 977,000**

WildPine Lab Department 40-41

Account	Description	FY 2023 Budget
610000	Land	$ -
620000	Buildings	-
630000	Improvements Other than Buildings (Infrastructure)	10,000
640000	Machinery and Equipment	-
641000	Vehicles	60,000
650000	Construction in Progress	-
Total		**$ 70,000**

Customer Service Department 40-42

Account	Description	FY 2023 Budget
610000	Land	$ -
62000	Buildings	-
630000	Improvements Other than Buildings (Infrastructure)	-
640000	Machinery and Equipment	-
641000	Vehicles	-
650000	Construction in Progress	-
Total		**$ -**

Information Technology Department 40-43

Account	Description	FY 2023 Budget
610000	Land	$ -
620000	Buildings	-
630000	Improvements Other than Buildings (Infrastructure)	-
640000	Machinery and Equipment	375,000
641000	Vehicles	-
650000	Construction in Progress	-
Total		**$ 375,000**

Engineering and Inspection Department 40-50

Account	Description	FY 2023 Budget
610000	Land	$ -
620000	Buildings	-
630000	Improvements Other than Buildings (Infrastructure)	-
640000	Machinery and Equipment	-
641000	Vehicles	149,493
650000	Construction in Progress	-
Total		**$ 149,493**

Construction Department 40-51

Account	Description	FY 2023 Budget
610000	Land	$ -
620000	Buildings	-
630000	Improvements Other than Buildings (Infrastructure)	-
640000	Machinery and Equipment	-
641000	Vehicles	-
650000	Construction in Progress	-
Total		**$ -**

Operations Administrative Department 50-10

Account	Description	FY 2023 Budget
610000	Land	$ -
620000	Buildings	-
630000	Improvements Other than Buildings (Infrastructure)	-
640000	Machinery and Equipment	-
641000	Vehicles	-
65000	Construction in Progress	125,000
Total		**$ 125,000**

Collection and Transmission Department 50-40

Account	Description	FY 2023 Budget
610000	Land	$ 2,500
620000	Buildings	-
630000	Improvements Other than Buildings (Infrastructure)	-
640000	Machinery and Equipment	250,000
641000	Vehicles	652,026
650000	Construction in Progress	-
651000	Construction in Progress - Neighborhood Sewering	275,000
652000	Construction in Progress - Lift Station	1,450,000
653000	Construction in Progress - Gravity System	3,275,000
654000	Construction in Progress - Force Main	164,895
655000	Construction in Progress - LPSS	-
656000	Construction in Progress - Permanent Generator	365,000
657000	Construction in Progress - Telemetry	2,395,500
Total		**$ 8,829,921**

Treatment and Disposal Department 50-50

Account	Description	FY 2023 Budget
610000	Land	$ -
620000	Buildings	250,000
630000	Improvements Other than Buildings (Infrastructure)	250,000
640000	Machinery and Equipment	375,000
641000	Vehicles	-
650000	Construction in Progress	730,000
Total		**$ 1,605,000**

Reuse Department 50-60

Account	Description	FY 2023 Budget
610000	Land	$ -
620000	Buildings	-
630000	Improvements Other than Buildings (Infrastructure)	-
640000	Machinery and Equipment	120,000
641000	Vehicles	-
650000	Construction in Progress	400,000
Total		**$ 520,000**

Bio-Solids Department 50-80

Account	Description	FY 2023 Budget
610000	Land	$ -
620000	Buildings	-
630000	Improvements Other than Buildings (Infrastructure)	-
640000	Machinery and Equipment	-
641000	Vehicles	-
650000	Construction in Progress	50,000
Total		**$ 50,000**

Total Capital $ 12,741,414

LOXAHATCHEE RIVER DISTRICT
2500 JUPITER PARK DRIVE, JUPITER, FLORIDA 33458 TEL: (561) 747-5700 FAX: (561) 747-9929

D. Albrey Arrington, Ph.D. EXECUTIVE DIRECTOR loxahatcheeriver.org

MEMORANDUM

TO: GOVERNING BOARD
FROM: D. ALBREY ARRINGTON, EXECUTIVE DIRECTOR
DATE: SEPTEMBER 6, 2022
SUBJECT: PROPOSED REVISIONS TO CHAPTER 31-5 RULEMAKING PROCEEDING

Last month, I provided proposed revisions to LRD Rule Chapter 31-5 Rulemaking Proceeding. Those suggested revisions were borne out of our ongoing effort to review and systematically improve our governance and governing documents. The current version of the Rule was last approved by the LRD Governing Board on October 20, 2011 and was reviewed and ratified as presented on May 21, 2020.

Mr. Shenkman, LRD General Counsel, and I have collaborated with Ms. Laura Donaldson, the governmental lawyer that assisted with revision of our enabling act, in the formulation of the suggested revisions. In general, proposed revisions to the rule are as follows:

1. Improved consistency with our Enabling Act (Chapter 2021-249, Laws of Florida) and updated all legal references to our Enabling Act.
2. Added a Definitions section and included key definitions.
3. Better characterized and/or defined requirements for key elements (e.g., Notice of Rule Development, petition requirements) and temporal limits (e.g., the District must respond to a petition to initiate rulemaking within 60 calendar days of receipt of such a petition).
4. Removed the provision allowing someone other than a Board Member to preside at a Public Hearing.
5. Cleaned up unclear text.

Following this memo, I have provided (1) a red-line version of the rule showing suggested revisions, (2) a clean version of the rule assuming all suggested revisions are accepted, and (3) a flowchart that communicates the key elements of this rule and how they are to be implemented.

I appreciate your careful review of this important document. We have scheduled a public hearing for 6:50 pm on September 15, 2022 at which the public can provide their input on the proposed revisions to Chapter 31-5 Rulemaking Proceedings. Pending public comment and Board input, I offer the following motion for your consideration:

"THAT THE DISTRICT GOVERNING BOARD approve Rule Chapter 31-5 Rulemaking Proceeding, as revised, with an effective date of September 16, 2022."

CHAPTER 31-5

RULEMAKING PROCEEDING

31-5.000 Definitions.

(1) The term "affected person" means any person having a substantial interest that is or reasonably will be affected by the subject District rule, a person regulated by the District, or an elector of the District.

(2) The term "Chair" means and refers to the Chair of the District's Governing Board.

(3) The term "District" means and refers to the Loxahatchee River Environmental Control District.

(4) The term "Notice of Rule Development" shall mean notice of the District's intention to adopt, amend, or repeal a rule.

(5) The term "rule" means each District statement of general applicability that implements, interprets, or prescribes law or policy or describes the procedure or practice requirements of the District. The term also includes the amendment or repeal of a rule.

(6) The term "person" means any individual, child, firm, association, joint adventure, partnership, estate, trust, business trust, syndicate, fiduciary, corporation, any unit of government in or outside the state, any agency, and all other groups or combinations.

(7) The term "petitioner" means the affected person requesting, via a written petition, the District to initiate rulemaking proceedings or for a public hearing, as applicable.

Specific Authority Chapter 2021-249, Laws of Florida. Law Implemented Chapter 2021-249, Laws of Florida, Section 6(19). History-New _____.

31-5.001 Commencement of Rulemaking Proceedings. Proceedings held for the adoption, amendment, or repeal of a District rule shall be conducted according to these rules. Rulemaking proceedings are initiated by the District, on its own initiative, or on the petition of ~~a~~an affected person ~~regulated by the District, or on the petition of a person having a substantial interest in a District rule. A~~. A rulemaking proceeding shall be deemed to have been initiated upon publication of ~~notice~~a Notice of Rule Development by the District on its website.

Specific Authority ~~and~~Chapter 2021-249, Laws of Florida. Law Implemented Chapter 2021-249, Laws of Florida, ~~Chapter 2002-358 §(~~Section (6)(19~~)~~). History-New 12-31-74, Amended 6-10-75, 3-23-80, 10-20-2011~~.~~, _____.

31-5.002 Notice of ~~Proceeding~~Rule Development and the Proposed Rules.

(1) Except as provided in 31-5.011, notice of ~~its~~the District's intention to adopt, amend, or repeal a rule (Notice of Rule Development) shall be published by the District on its website at least fourteen (14) calendar days prior to the rule adoption, amendment, or repeal.

(2) Upon the publication of ~~notice of its intention to adopt, amend or repeal a rule~~the Notice of Rule Development, a draft of the proposed rules shall be made available to the public.

Specific Authority ~~and~~ Chapter 2021-249, Laws of Florida. Law Implemented Chapter 2021-249, Laws of Florida, ~~Chapter 2002-358 §(~~Section (6)(19~~) .~~). History-New 12-31-74, amended 6-10-75, 3-23-80, 10-20-2011~~.~~, _____.

~~**31-5.003 Content of Notice**. The notice must include the subject matter of the rulemaking and the text of the proposed rule may be included in the notice.~~

31-5.003 Content of Notice of Rule Development. The Notice of Rule Development shall include the subject area to be addressed by the rule development, amendment, or repeal; provide a short, plain explanation of the purpose and effect of the proposed rule; cite the specific legal authority for the proposed rule; identify the District's contact person regarding the rule development, amendment, or repeal; include a statement of how a person may promptly obtain a copy of any preliminary draft, of the proposed rule, if available; and include a statement that an affected person may request a public hearing on the proposed rule (if the proposed rule does not relate exclusively to organization, practice or procedure) pursuant to the process and requirements of District Rule 31-5.009. The Notice of Rule Development may, but is not required to, include the text of the proposed rule.

Specific Authority ~~and~~ Chapter 2021-249, Laws of Florida. Law Implemented Chapter 2021-249, Laws of Florida, ~~Chapter 2002-358 §(~~Section (6)(19~~) .~~). History-New 12-31-74, Amended 6-10-75, 3-23-80, 10-20-2011~~.~~, _____.

31-5.004 Petitions to Initiate Rulemaking Proceedings.

(1) All petitions for the initiation of rulemaking proceedings to adopt, amend, or repeal a rule must be in writing and contain: (a) the name, phone number, and address of the petitioner~~.~~;; (b) an explanation of how, and the facts showing that, the petitioner is an affected person impacted by the rule that petitioner is requesting the District to adopt, amend, or repeal; (c) a statement of the specific action ~~requested,~~petitioner wishes the District to take; (d) the date the petition is submitted~~, and~~ to the District; (e) the specific reason for the requested rule adoption, amendment,

or repeal; and (f) shall specify the text of the proposed rule that petitioner is requesting the District to adopt, amend, or repeal.

(2) Any interested person may file a statement in support of or in opposition to any petition for the initiation of rulemaking proceedings. The interested person shall furnish the petitioner with a copy upon filing of the statement with the District.

Specific Authority ~~and~~ Chapter 2021-249, Laws of Florida. Law Implemented Chapter 2021-249, Laws of Florida, ~~Chapter 2002-358 §(~~Section (6)(19). History-New 12-31-74, Amended 6-10-75, 3-23-80, 10-20-2011~~.~~, _____.

31-5.005 District Action on Petitions to Initiate Rulemaking Proceedings.

(1) Upon receipt of any petition for the initiation of rulemaking to adopt, amend, or repeal a rule, the District shall assign the petition an identification number. The District shall publish notice of receipt and disposition of a petition for the initiation of rulemaking on its website.

(2) ~~.~~Not later than sixty (60) calendar days following the date of filing a petition to initiate rulemaking, the District shall initiate rulemaking proceedings or deny the petition. If the District determines that the petitioner is not ~~regulated by the District or does not have a substantial interest in the District rule, or does not have the interest as stated in the petition,~~an affected person or the subject matter of the requested rulemaking is not required to be addressed by the District as determined by the District's Governing Board, or otherwise determines that the petition does not contain adequate justification for the requested rulemaking, the District may forthwith deny the petition, and shall notify the petitioner in writing of the denial~~.~~, including a brief statement of its reasons for the denial. If the District determines that the petition ~~should be considered further~~contains adequate justification for the requested rulemaking, the District shall issue ~~notice~~a Notice of Rule Development and initiate ~~such District action. If the District determines that rulemaking should not be initiated, a written statement of the determination shall be provided to the petitioner.~~rulemaking proceedings.

*Specific Authority ~~and~~ Chapter 2021-249, Laws of Florida. Law Implemented Chapter 2021-249, Laws of Florida, ~~Chapter 2002-358 §(~~Section (6)(19). History-new 12-31-74, amended 6-10-75, 3-23-80, 10-20-2011~~.~~, _____.

31-5.007 Rulemaking Materials. After the publication of ~~notice initiating rulemaking~~Notice of Rule Development on its website, the District shall make available for public inspection and shall provide upon request, copies of the text of the proposed rule~~, or any amendment, or repeal of any existing rule~~ to be adopted, amended or repealed.

*Specific Authority ~~and~~ Chapter 2021-249, Laws of Florida. Law Implemented Chapter 2021-249, Laws of Florida, ~~Chapter 2002-358 §(~~Section (6)(19). History-New 3-23-80, 10-20-2011~~.~~, _____.

31-5.008 Rulemaking Proceeding – No Hearing. When no public hearing is requested, or a public hearing is requested but the petitioner is not an affected person, and when the District chooses not to initiate a public hearing on its own, the District may direct that the proposed rule be considered on its consent agenda.

Specific Authority ~~*and*~~ *Chapter 2021-249, Laws of Florida.* *Law Implemented* *Chapter 2021-249, Laws of Florida,* ~~Chapter 2002-358 §(~~*Section (6)(19).* *History-New 3-23-80, 10-20-2011*~~.~~, _____.

31-5.009 Rulemaking Proceeding – Hearing.

(1) ~~If~~The District shall provide a public hearing if: (i) a petition requesting a public hearing is received by the District from an affected person(s) (hereinafter referred to as "petitioner") within fourteen (14) calendar days after the date of publication on the District's website of the Notice of Rule Development for the proposed rule; (ii) the petition contains the information specified in paragraph (2) below; and (iii) the proposed rule does not relate exclusively to District organization, practice, or procedure~~, the~~. The District shall ~~provide, upon request, a~~ publish notice of the public hearing on its website at least seven (7) calendar days before the scheduled public hearing. The public hearing shall allow for presentation by the District and petitioner(s) of evidence, argument, and oral statements, within the reasonable conditions and limitations imposed by the District to avoid duplication, irrelevant comments, unnecessary delay, or disruption of the ~~proceeding.~~public hearing. Written statements may be submitted to the District prior to the public hearing by any person, and may be considered and made a part of the record if authorized by the District.

(2) A petition requesting a public hearing ~~shall~~must be ~~held if~~ in writing and, at a minimum, contain the following information: (a) the name and address of the petitioner; (b) the proposed rule(s) a public hearing is requested on; (c) an explanation of how, and the facts showing that, the petitioner is an affected person ~~requests a hearing within fourteen (14) days after~~that will be impacted by the proposed rule(s); (d) the date ~~of publication of the~~ the petition is being submitted to the District; (e) the specific action the petitioner is requesting the District to take on the proposed rule(s); and (f) an explanation of the facts and grounds the petitioner contends support its requested action on the proposed rule(s). Not later than sixty (60) calendar days following the date of filing a petition to initiate rulemaking, the District shall notice~~. The~~ the public hearing or deny the petition. If the District determines that the petitioner is not an affected person, the District may forthwith deny the petition, and shall notify the petitioner in writing of the denial, including a brief statement of its reasons for the denial.

(3) The District may also decide on its own initiative to hold a public hearing on a proposed rule and shall publish notice of this fact on its website at least seven (7) calendar days before the scheduled public hearing.

(~~3~~4) The District shall prepare an agenda for the public hearing that provides the petitioner, and affected persons (if any) with sufficient time to present evidence, argument, or oral statements, and other information.

(~~4~~5) The District may take official recognition of any material that is of common and general knowledge, authoritatively well settled, and free from uncertainty. If the material is officially recognized by the District, it is deemed to be admissible without the necessity of the offering party presenting evidence. This material shall be part of the record and all affected persons shall be given a reasonable opportunity to examine and offer evidence and argument in opposition.

(~~5~~6) Upon request of any petitioner, and affected person~~,~~ (if any), the District shall cause to be made a transcript of the ~~proceeding and copies of the transcript of the proceeding shall be available to the~~ public~~. Cost~~ hearing. The cost of preparing the transcript and having the

proceeding recorded shall be paid by the requesting person. A copy of the transcript shall be available to the public at cost.

(~~6~~7) The ~~Chairman~~Chair of the Governing Board, any member thereof, ~~or any person designated by the Chairman~~ may preside at a public hearing. ~~If requested by~~Following the ~~Chairman, following the~~public hearing, the Executive Director shall ~~provide a statement of changes which will be recommended in the proposed rule, to any person who requests it at the hearing, and shall prepare a summary of such hearing and~~ present any recommendations for changes in the proposed rule to the Governing Board for final consideration. The Governing Board shall issue a final decision in writing, and stating the reasons therefor, within seventy (70) calendar days after the public hearing.

Specific Authority ~~and~~ Chapter 2021-249, Laws of Florida. Law Implemented Chapter 2021-249, Laws of Florida, ~~Chapter 2002-358 §(6~~Section (6)(19). History-New 12-31-74, Amended 6-10-75, 3-23-80, 10-20-2011~~.~~, _____.

31-5.010 Incorporation by Reference. Any rule, standard, specification, or similar material ~~which~~that is generally available to affected persons, which includes material available on the District's website, may be incorporated in a rule~~,~~ by reference.

Specific Authority ~~and~~ Chapter 2021-249, Laws of Florida. Law Implemented Chapter 2021-249, Laws of Florida, ~~Chapter 2002-358 §(~~Section (6)(19). History-New 12-31-74, amended 6-10-75, 3-23-80, 10-20-2011~~.~~, _____.

31-5.011 Emergency Rule Adoption.

(1) The District may adopt an emergency rule if the~~-~~ District finds that immediate danger to the public health, safety and welfare exists, or which could exist, which requires immediate District action.

(2) Unless it defeats the purpose of any emergency rule, the District should notify the Palm Beach Post and place a notice of emergency rulemaking on the District's website before adopting an emergency rule. The District shall permit, upon receipt of a request by an affected person within forty-eight (48) hours of the emergency rule being on the District's website, any affected ~~persons~~person to present testimony, evidence, and submit written statements~~.~~ on the proposed emergency rule. The emergency rule shall remain effective until such time as Governing Board codifies the emergency rule, amends it, or repeals it.

(3) Upon the timely request of any affected person, the District shall cause a transcript to be made of the emergency rule adoption proceeding and shall compile a record, consisting of the transcript, copies of the notice~~-~~, and any other matter of information considered by the District in adopting the emergency rule. Cost of preparing the transcript and having the proceeding recorded shall be paid by the requesting affected person. A recording may be made of the proceeding.

(4) Notwithstanding subsection (2) and (3) above, the District may use any procedure ~~which~~that is fair under the circumstances in the adoption of any emergency rule as long as it protects the public interest.

Specific Authority ~~and~~ Chapter 2021-249, Laws of Florida. Law Implemented Chapter 2021-249, Laws of Florida, ~~Chapter 2002-358 §(~~Section (6)(19). History-New 12-31-74, amended 6-10-75, 3-23-80, 10-20-2011~~.~~, _____.

CHAPTER 31-5

RULEMAKING PROCEEDING

31-5.000 Definitions.

(1) The term "affected person" means any person having a substantial interest that is or reasonably will be affected by the subject District rule, a person regulated by the District, or an elector of the District.

(2) The term "Chair" means and refers to the Chair of the District's Governing Board.

(3) The term "District" means and refers to the Loxahatchee River Environmental Control District.

(4) The term "Notice of Rule Development" shall mean notice of the District's intention to adopt, amend, or repeal a rule.

(5) The term "rule" means each District statement of general applicability that implements, interprets, or prescribes law or policy or describes the procedure or practice requirements of the District. The term also includes the amendment or repeal of a rule.

(6) The term "person" means any individual, child, firm, association, joint adventure, partnership, estate, trust, business trust, syndicate, fiduciary, corporation, any unit of government in or outside the state, any agency, and all other groups or combinations.

(7) The term "petitioner" means the affected person requesting, via a written petition, the District to initiate rulemaking proceedings or for a public hearing, as applicable.

Specific Authority Chapter 2021-249, Laws of Florida. Law Implemented Chapter 2021-249, Laws of Florida, Section 6(19). History-New 9-15-2022.

31-5.001 Commencement of Rulemaking Proceedings. Proceedings held for the adoption, amendment, or repeal of a District rule shall be conducted according to these rules. Rulemaking

proceedings are initiated by the District, on its own initiative, or on the petition of an affected person. A rulemaking proceeding shall be deemed to have been initiated upon publication of a Notice of Rule Development by the District on its website.

Specific Authority Chapter 2021-249, Laws of Florida. Law Implemented Chapter 2021-249, Laws of Florida, Section (6)(19). History-New 12-31-74, Amended 6-10-75, 3-23-80, 10-20-2011, 9-15-2022.

31-5.002 Notice of Rule Development and Proposed Rules.

(1) Except as provided in 31-5.011, notice of the District's intention to adopt, amend, or repeal a rule (Notice of Rule Development) shall be published by the District on its website at least fourteen (14) calendar days prior to the rule adoption, amendment, or repeal.

(2) Upon the publication of the Notice of Rule Development, a draft of the proposed rule shall be made available to the public.

Specific Authority Chapter 2021-249, Laws of Florida. Law Implemented Chapter 2021-249, Laws of Florida, Section (6)(19). History-New 12-31-74, amended 6-10-75, 3-23-80, 10-20-2011, 9-15-2022.

31-5.003 Content of Notice of Rule Development. The Notice of Rule Development shall include the subject area to be addressed by the rule development, amendment, or repeal; provide a short, plain explanation of the purpose and effect of the proposed rule; cite the specific legal authority for the proposed rule; identify the District's contact person regarding the rule development, amendment, or repeal; include a statement of how a person may promptly obtain a copy of any preliminary draft, of the proposed rule, if available; and include a statement that an affected person may request a public hearing on the proposed rule (if the proposed rule does not relate exclusively to organization, practice or procedure) pursuant to the process and requirements of District Rule 31-5.009. The Notice of Rule Development may, but is not required to, include the text of the proposed rule.

Specific Authority Chapter 2021-249, Laws of Florida. Law Implemented Chapter 2021-249, Laws of Florida, Section (6)(19). History-New 12-31-74, Amended 6-10-75, 3-23-80, 10-20-2011, *9-15-2022*.

31-5.004 Petitions to Initiate Rulemaking Proceedings.

(1) All petitions for the initiation of rulemaking proceedings to adopt, amend, or repeal a rule must be in writing and contain: (a) the name, phone number, and address of the petitioner; (b) an explanation of how, and the facts showing that, the petitioner is an affected person impacted by the rule that petitioner is requesting the District to adopt, amend, or repeal; (c) a statement of the specific action petitioner wishes the District to take; (d) the date the petition is submitted to the District; (e) the specific reason for the requested rule adoption, amendment, or repeal; and (f) shall specify the text of the proposed rule that petitioner is requesting the District to adopt, amend, or repeal.

(2) Any interested person may file a statement in support of or in opposition to any petition for the initiation of rulemaking proceedings. The interested person shall furnish the petitioner with a copy upon filing of the statement with the District.

Specific Authority Chapter 2021-249, Laws of Florida. Law Implemented Chapter 2021-249, Laws of Florida, Section (6)(19). History-New 12-31-74, Amended 6-10-75, 3-23-80, 10-20-2011, *9-15-2022*.

31-5.005 District Action on Petitions to Initiate Rulemaking Proceedings.

(1) Upon receipt of any petition for the initiation of rulemaking to adopt, amend, or repeal a rule, the District shall assign the petition an identification number. The District shall publish notice of receipt and disposition of a petition for the initiation of rulemaking on its website.

(2) Not later than sixty (60) calendar days following the date of filing a petition to initiate rulemaking, the District shall initiate rulemaking proceedings or deny the petition. If the District determines that the petitioner is not an affected person or the subject matter of the requested rulemaking is not required to be addressed by the District as determined by the District's Governing Board, or otherwise determines that the petition does not contain adequate justification for the requested rulemaking, the District may forthwith deny the petition, and shall notify the petitioner in writing of the denial, including a brief statement of its reasons for the denial. If the District determines that the petition contains adequate justification for the requested rulemaking, the District shall issue a Notice of Rule Development and initiate rulemaking proceedings.

Specific Authority Chapter 2021-249, Laws of Florida. Law Implemented Chapter 2021-249, Laws of Florida, Section (6)(19). History-new 12-31-74, amended 6-10-75, 3-23-80, 10-20-2011, 9-15-2022.

31-5.007 Rulemaking Materials. After the publication of Notice of Rule Development on its website, the District shall make available for public inspection and shall provide upon request, copies of the text of the proposed rule to be adopted, amended, or repealed.

Specific Authority Chapter 2021-249, Laws of Florida. Law Implemented Chapter 2021-249, Laws of Florida, Section (6)(19). History-New 3-23-80, 10-20-2011, 9-15-2022.

31-5.008 Rulemaking Proceeding – No Hearing. When no public hearing is requested, or a public hearing is requested but the petitioner is not an affected person, and when the District chooses not to initiate a public hearing on its own, the District may direct that the proposed rule be considered on its consent agenda.

Specific Authority Chapter 2021-249, Laws of Florida. Law Implemented Chapter 2021-249, Laws of Florida, Section (6)(19). History-New 3-23-80, 10-20-2011, 9-15-2022.

31-5.009 Rulemaking Proceeding – Hearing.

(1) The District shall provide a public hearing if: (i) a petition requesting a public hearing is received by the District from an affected person(s) (hereinafter referred to as "petitioner") within fourteen (14) calendar days after the date of publication on the District's website of the Notice of Rule Development for the proposed rule; (ii) the petition contains the information specified in paragraph (2) below; and (iii) the proposed rule does not relate exclusively to District organization, practice, or procedure. The District shall publish notice of the public hearing on its website at least seven (7) calendar days before the scheduled public hearing. The public hearing shall allow for presentation by the District and petitioner(s) of evidence, argument, and oral statements, within

the reasonable conditions and limitations imposed by the District to avoid duplication, irrelevant comments, unnecessary delay, or disruption of the public hearing. Written statements may be submitted to the District prior to the public hearing by any person and may be considered and made a part of the record if authorized by the District.

(2) A petition requesting a public hearing must be in writing and, at a minimum, contain the following information: (a) the name and address of the petitioner; (b) the proposed rule(s) a public hearing is requested on; (c) an explanation of how, and the facts showing that, the petitioner is an affected person that will be impacted by the proposed rule(s); (d) the date the petition is being submitted to the District; (e) the specific action the petitioner is requesting the District to take on the proposed rule(s); and (f) an explanation of the facts and grounds the petitioner contends support its requested action on the proposed rule(s). Not later than sixty (60) calendar days following the date of filing a petition to initiate rulemaking, the District shall notice the public hearing or deny the petition. If the District determines that the petitioner is not an affected person, the District may forthwith deny the petition, and shall notify the petitioner in writing of the denial, including a brief statement of its reasons for the denial.

(3) The District may also decide on its own initiative to hold a public hearing on a proposed rule and shall publish notice of this fact on its website at least seven (7) calendar days before the scheduled public hearing.

(4) The District shall prepare an agenda for the public hearing that provides the petitioner and affected persons (if any) with sufficient time to present evidence, argument, or oral statements, and other information.

(5) The District may take official recognition of any material that is of common and general knowledge, authoritatively well settled, and free from uncertainty. If the material is officially recognized by the District, it is deemed to be admissible without the necessity of the offering party presenting evidence. This material shall be part of the record and all affected persons shall be given a reasonable opportunity to examine and offer evidence and argument in opposition.

(6) Upon request of any petitioner, and affected person (if any), the District shall cause to be made a transcript of the public hearing. The cost of preparing the transcript and having the proceeding recorded shall be paid by the requesting person. A copy of the transcript shall be available to the public at cost.

(7) The Chair of the Governing Board, or any member thereof, may preside at a public hearing. Following the public hearing, the Executive Director shall present any recommendations for changes in the proposed rule to the Governing Board for final consideration. The Governing Board shall issue a final decision in writing, and stating the reasons therefor, within seventy (70) calendar days after the public hearing.

Specific Authority Chapter 2021-249, Laws of Florida. Law Implemented Chapter 2021-249, Laws of Florida, Section (6)(19). History-New 12-31-74, Amended 6-10-75, 3-23-80, 10-20-2011, 9-15-2022.

31-5.010 Incorporation by Reference. Any rule, standard, specification, or similar material that is generally available to affected persons, which includes material available on the District's website, may be incorporated in a rule by reference.

Specific Authority Chapter 2021-249, Laws of Florida. Law Implemented Chapter 2021-249, Laws of Florida, Section (6)(19). History-New 12-31-74, amended 6-10-75, 3-23-80, 10-20-2011, 9-15-2022.

31-5.011 Emergency Rule Adoption.

(1) The District may adopt an emergency rule if the District finds that immediate danger to the public health, safety and welfare exists, or which could exist, which requires immediate District action.

(2) Unless it defeats the purpose of any emergency rule, the District should notify the Palm Beach Post and place a notice of emergency rulemaking on the District's website before adopting an emergency rule. The District shall permit, upon receipt of a request by an affected person within forty-eight (48) hours of the emergency rule being on the District's website, any affected person to present testimony, evidence, and submit written statements on the proposed emergency rule. The emergency rule shall remain effective until such time as Governing Board codifies the emergency rule, amends it, or repeals it.

(3) Upon the timely request of any affected person, the District shall cause a transcript to be made of the emergency rule adoption proceeding and shall compile a record, consisting of the transcript, copies of the notice, and any other matter of information considered by the District in adopting the emergency rule. Cost of preparing the transcript and having the proceeding recorded shall be paid by the requesting affected person. A recording may be made of the proceeding.

(4) Notwithstanding subsection (2) and (3) above, the District may use any procedure that is fair under the circumstances in the adoption of any emergency rule as long as it protects the public interest.

Specific Authority Chapter 2021-249, Laws of Florida. Law Implemented Chapter 2021-249, Laws of Florida, Section (6)(19). History-New 12-31-74, amended 6-10-75, 3-23-80, 10-20-2011, 9-15-2022.

Chapter 31-5 Rulemaking Flowchart

Public (affected person) desires to initiate rulemaking

Public (affected person) submits petition[‡] to initiate rulemaking

District Executive Director assigns petition a #
Publish on LRD website:
(a) Notice of receipt
(b) Disposition of petition

Within 60 days of receipt of petition:
(a) Initiate rulemaking, or
(b) Deny petition by Governing Board vote and notify petitioner in writing.

District desires to implement rulemaking

Is it an emergency[†]?

no

yes

Publish Notice of Rule Development on LRD website

Post draft rule on LRD website

[*]Discuss draft rule in regular, public Board Meeting

Publish public notice of public hearing on LRD website

Not sooner than 7 days after publication of public hearing notice, Conduct Public Hearing regarding draft rule

Executive Director to prepare summary of public hearing with recommendations for rule changes

Not sooner than 14 days after publication of Notice of Rule Development, Governing Board adopt rule at a public meeting.

Within 70 days of public hearing, Governing Board will issue a written decision and state the reasons supporting the decision.

No Public Hearing – District may omit public hearing if not requested (see Chapter 31-5.008). If no public hearing, rule may be considered on Consent Agenda.

Publish Notice of Emergency Rulemaking on:
1. LRD website
2. Palm Beach Post

Accept public comments, testimony, and evidence received from affected persons within 48 hours of publication of emergency rulemaking notice.

Governing Board adopt emergency rule at a public meeting.

Example text for "Notice of Rule Development":
NOTICE OF RULE DEVELOPMENT
The Loxahatchee River Environmental Control District gives notice of its intent to [adopt/repeal/amend] Chapter [insert entire chapter number of specific rule] during its regularly scheduled Governing Board meeting on [insert date] at [insert location].
TITLE/SUBJECT: [insert subject].
PURPOSE AND EFFECT: The Loxahatchee River Environmental Control District is proposing [the adoption/amendment/repeal] of [insert rule chapter/section] for the purpose of [insert short summary explaining purpose and effect].
RULEMAKING AUTHORITY: Chapter 2021-249, Laws of Florida.
LAWS IMPLEMENTED: Chapter 2021-249 [insert specific subsections], Laws of Florida.
The person to be contacted regarding the proposed rule development and to receive a copy of the preliminary draft, if available is: [insert name, address, phone number, and email address].
An affected person, as defined by District Rule 31-5.000, may request a public hearing on the proposed rule pursuant to the process and requirements of District Rule 31-5.009.

[‡] Petition must be in writing and contain: (a) the name, phone number, and address of the petitioner; (b) an explanation of how, and the facts showing that, the petitioner is an affected person impacted by the rule that petitioner is requesting the District to adopt, amend, or repeal; (c) a statement of the specific action petitioner wishes the District to take; (d) the date the petition is submitted to the District; (e) the specific reason for the requested rule adoption, amendment, or repeal; and (f) shall specify the text of the proposed rule that petitioner is requesting the District to adopt, amend, or repeal.

[†] An emergency is something that presents immediate danger to public health.

[*]This step is not required by rule and may be skipped.

LOXAHATCHEE RIVER DISTRICT

Neighborhood Sewering Schedule-Revised February 2020

Rank *	Area Description	# Lots	Activity	Original Target Date	Revised Target Start Date
11	Jupiter Farms (East)	708		TBD	TBD
11	PB Country Estates	1547		TBD	TBD

* Rank based upon "2010 Septic System Inventory & Assessment"
TBD = To be determined

Remnant Areas

Rank*	Area Description	Lots	Activity	Original Target Date	Revised Target Start Date
H	Olympus Dr, Juno (LP)	2	Notified Owners – June 2013 Prelim. Design started – August 2017 Notice of Intent to Assess – July 2020	2016	2021
	605+607 Military Trl (LP)	2	Notified Owners – June 2020 Notice of Intent – Jan 2021	2022	
	18041 69th Terrace	1	LRD procedures shared for connection to sewer services Statutory Way Provision – Jan 2022	N/A	2022
	5331 Center Street	1	LRD procedures shared for connection to sewer services Notice of Intent – March 2022	N/A	2022
	18150 SE Wooden Bridge Lane	1	LRD procedures shared for connection to sewer services Notice of Intent – May 2022	N/A	2022
	Island Way Property	1	Notice of Intent – August 2022	N/A	2022

Rank *	Area Description	# Lots	Activity	Original Target Date	Revised Target Start Date
AA	Peninsular Road	4	Private Road Notice of Intent – February 2010 Partial construction complete - June 2013 Soliciting easements for remainder of project	2010	AEO
BB	Rivers Edge Road (Martin Co.)	35	Notified Owners – August 2010 Private Road-Easements Solicited –May 2014 Notice of Intent – February 2014 Project Delayed	2013	AEO
CC	171st Street (Martin Co.)	7	Private Road - In House Design Owners notified October 2012 Easement rec'd from Church – April 2017 Grant received	2014	AEO
CC	Jamaica Dr	11	Private Road Owners notified Oct 2012 Statutory Way Provision (2) – June 2021	2014	AEO
D	Loggerhead Park *(institutional)*	6 ECs	Need Easements from County-No database	2014	AEO
DD	Taylor Road	38	Notified Owners – September 2011 Private Roads	2015	AEO
FF	Rolling Hills	50	Notified Owners – Jan. 2013 - Private HOA Notice of Intent to Assess – October 2019 Award of Contract – December 2021	2017	2021
FF	North A1A	3	Postponed-Town activities in area No database	2012	AEO
GG	815 S US 1 (Yum Yum Tree)	9 ecs	Notified Owner – November 2014	2016	AEO
GG	Rockinghorse *(north of Roebuck Road)*	11	Notified Owners – January 2013	2018	AEO
GG	Castle Rd SE	5	Notified Owners – Jan 2013-private road	2018	AEO
GG	Jupiter Rd SE	4	Notified Owners – Jan 2013-private road	2018	AEO
HH	Harbor Rd. S. LPSS	6	Notified Owners – January 2014-private road	2017	AEO
HH	Indian Hills SE	12	Notified Owners – January 2016 Easement for Road & Utilities, No Dedication	2019	AEO
16	Limestone Creek Road West	49	Notified Owners – January 2013-private road	2018	TBD
19	US Coast Guard Station Offices *(institutional)* PX Commercial *(commercial)*	2 ECs 2 ECs	US Government - private roads-No database Contract for installation of sanitary sewers – September 2020	2019	2021
	109+111 Old Jupiter Beach Road	2	Notified Owners – September 2021		

* Rank based upon "2010 Septic System Inventory & Assessment
TBD = To be determined AEO = As easements are obtained

CURTIS L. SHENKMAN
Board Certified
Real Estate Attorney
HUNTER SHENKMAN
Attorney

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Curtis@PalmBeachLawyer.Law

LEGAL ASSISTANTS
REAL ESTATE
JUDY D. MONTEIRO
DENISE B. PAOLUCCI
KRISTY SANTORO

September 6, 2022

Loxahatchee River Environmental Control District
D. Albrey Arrington, Exec. Dir. and Board Members (sent by email to S. Patel)
2500 Jupiter Park Drive
Jupiter, FL 33458

RE: PENDING LITIGATION STATUS REPORT

Dear Dr. Arrington and Board Members:

We are enclosing herewith a brief status report relating to the litigation in which the Loxahatchee River Environmental Control District is involved with our law firm as the attorney of record, and/or monitoring the attorney of record. This status report updates the last monthly status report previously submitted and consists of a summary of the record proceedings which have occurred in each of the pending cases since last month.

There are no analyses of the pending cases included, as the inclusion of such items might constitute a waiver of any attorney/client privilege that exists between our firm and the District. Therefore, if you would like to discuss the particulars of any specific case in more detail or would like to obtain more information concerning the strategy, status, or settlement posture of any of the individual cases, please feel free to contact me.

As always, we are available at any time to discuss any of these lawsuits with each individual Board Member by telephone or by conference, if there are any questions.

Respectfully submitted,

CURTIS L. SHENKMAN

CURTIS L. SHENKMAN

Attachments

OTHER LITIGATION

IN THE CIRCUIT COURT OF THE FIFTEENTH JUDICIAL CIRCUIT, IN AND FOR PALM BEACH COUNTY, FLORIDA
CASE NO. 50-2019 CA 014447 XXXX MB AB

FRED BEMAN, Plaintiff,vs.
LOXAHATCHEE RIVER DISTRICT,
Defendant.

December 6, 2017. Auto Accident involving District vehicle and vehicle driven by Fred Beman.
April 15, 2020. Summons & Complaint served upon the District.
April 20, 2020. Attorney Lyman Reynolds, appointed be District's Insurance Carrier to Defend the District under the District's Insurance Policy.
May 4, 2020. District's Motion to Dismiss filed.
July 8, 2020. District's attorney reports Motion to Dismiss not yet set for a hearing.
August 19, 2020. Agreed Order permitting transfer of the case to Martin County Sept 16, 2020. Amended Complaint filed in Martin County
November 16, 2021, Notice of Lack of Prosecution filed in Palm Beach County.
Dec 2, 2021, Summons served on the District; Attorney Reynolds responded with Motion to Dismiss on December 17, 2021.
January 14, 2022. District's Responses to Plaintiff's Request for Production and Interrogatories was filed.
January 31, 2022. District's Motion to Dismiss denied. District's Answer due by February 20, 2022, being prepared by Attorney Reynolds.
February 20, 2022, District's Answer Filed.
April 22, 2022, Deposition of Plaintiff
June 21, 2022, Attorney Reynolds indicated projected trail date is December 18, 2023, and provided confidential information to claims adjuster.

Pre-Suit Notice of Claim under FS 768.28 (6)(a)
Dated August 3, 2020, from Attorney for Plaintiff

Donovan Mackey and Dee Mackey, PlaintiffVs.
LOXAHATCHEE RIVER DISTRICT, Defendant.

On or about October 2019 sewage back up into 141 Beacon Lane, Jupiter, FL 33469 (Jupiter Inlet Colony). Plaintiffs claim personal injury from the sewage back up.
August 3, 2020, District notified District's insurance carrier of the claim.
August 18, 2020, Insurance Adjuster for the District assigned the claim.
As of July 11, 2022, No activity since Adjuster assigned the claim
Plaintiff cannot file suit until claim is denied. 768.28 (6)(b).
Statute of Limitations is running on the claim.

Pre-Suit Notice of Claim under FS 768.28(6)(a)
Universal Property & Casualty Insurance Company a/s/o Betty Cavanagh & Jules Formel, Plaintiff VS.
LOXAHATCHEE RIVER DISTRICT, Defendant.

On or about November 18, 2020, sewage back up into 18081 SE Country Club Drive, Apt 4-33, Tequesta, FL 33469. The Owners, Betty Cavanagh & Jules Formel made claim to their insurance company, University Property & Casualty Company.
On April 29, 2021, 2020, the Insurance Adjuster for University Property & Casualty Company notified the District's Insurance Company, PGCS Claims Services of the claim.
On July 13, 2021, University Property & Casualty Company (UPCC), as subrogee of Betty Cavanagh & Jules Formel, notified the District in accordance with 768.28, the District has 6 months from receipt of the letter to investigate this claim and provide formal acceptance or

denial. Plaintiffs claim property damage from the sewage back up in the amount of $26,860.
PGCS has been investigating.
On July 12, 2022, PGCS informed the District, that UPCC resubmitted new information as to the claim in the amount of $28,860.00. PGCS is investigating the claim. Plaintiff cannot file suit until claim is denied. 768.28 (6)(b).

LIEN FORECLOSURES

NONE

MORTGAGE OR LIEN FORECLOSURES / LRD COUNTERCLAIMS/CROSSCLAIMS

NONE

Loxahatchee River Environmental Control District
Monthly Status Report
September 2, 2022

Submitted To: Kris Dean, P.E, Deputy Executive Director/Director of Engineering

The following is a summary of work performed by Baxter and Woodman, Inc. (B&W), on District projects for the monthly period ending September 2, 2022.

Irrigation Quality 511 (IQ-511) Pump Station Piping Improvements

The following items were ongoing or completed during the last monthly period:

- Payment Application No. 5 submitted to District on August 8, 2022.
- Contractor has completed mechanical piping work, light pole installation and installation of the sluice gate at diversion Structure B
- Remaining work includes: roadway restoration, sod restoration, installation of level transducers and electrical work.

Lift Station Fall Protection Improvements

The following items were ongoing or completed during the last monthly period:

- No activity this period. The additional safety grates for five more lift stations at the plant are scheduled for shipment on September 23, 2022.

Structural Condition Assessment of Headworks, Diversion Structure A

- Scope and fee proposal approved July 27, 2022.
- Field investigation scheduled for September 15, 2022

Respectfully Submitted by:

BAXTER & WOODMAN, INC.

Rebecca Travis, P.E.
Executive Vice President / Florida Division Manager

carollo
Engineers...Working Wonders With Water®

2056 Vista Parkway. Suite 400, West Palm Beach, Florida 33411
P. 561.868.6400 F. 561.868.6401

September 6, 2022

Mr. Kris Dean, P.E.
Deputy Director/Director of Engineering
Loxahatchee River Environmental Control District
2500 Jupiter Park Drive
Jupiter, FL 33458

Subject: Final Monthly Progress Report

Dear Mr. Dean:

The following activities were conducted in the months of July and August 2022 for the MLS Bypass Study:

1. Addressed final changes to the Model Documentation and Bypass Study Results Technical Memorandum.
2. Finalized QA/QC procedures for the hydraulic model.
3. Submitted Final Model Documentation and Bypass Study Results TM, Hydraulic Model, and Subconsultant deliverable.

The MLS Bypass Study project has been completed. We look forward to continue to support the District's vision, goals, and needs through future projects as needed. Please let me know if you have any questions.

Sincerely,

CAROLLO ENGINEERS, INC.

Elizabeth Fujikawa, P.E., LEED AP
Vice President

500 S. Australian Ave., Suite 850
West Palm Beach, FL 33401
Office: +1 (561) 746-6900

chen moore and associates

Loxahatchee River Environmental Control District
CMA Project Status Update
September 7, 2022

CMA Project #	Name	Activities Performed
494.001	BLM House Demolition and Reconstruction	• Conceptual Design Memorandum and building layout options approved by Board 10/21/21 • Coordination meeting held 11/12/21 • 90% design, specifications and cost estimate submitted • LRD plan comments addressed • Proposed roof alternative design submitted to LRD for review (to address comments from SHPO) • Bid documents submitted to LRD • Comments received from LRD and responses underway
494.002	2500 Jupiter Park Drive Conceptual Site Planning	• Conducted kick off meeting 11/12/21 • Environmental field work performed, report submitted, comments received from LRD, revised report submitted • Staff and Board survey performed • Existing site base plan prepared • Review of adjacent stormwater permits performed • Site concept plans prepared • Site visits and meeting with LRD was conducted to review survey results and concept plans • Presented survey results and concept plans to Board • Submitted data request to LRD for massing study and received results. Provided LRD with initial space calculations. • Reviewed WWTF capacity expansion goals with LRD. Submitted memorandum on the WWTF future space to LRD. • Submitted draft Site Security memorandum and received comments from LRD. Revisions to the memo are underway.

HOLTZ CONSULTING ENGINEERS, INC.
270 South Central Boulevard, Suite 207, Jupiter, FL 33458 (561) 575 2005

MEMORANDUM

To: Kris Dean, PE, Deputy Director/Director of Engineering, Loxahatchee River Environmental Control District

From: Christine Miranda, PE, Holtz Consulting Engineers, Inc.

Date: September 8, 2022

Subject: **Loxahatchee River Environmental Control District Monthly Status Report**

The following is a summary of work performed by Holtz Consulting Engineers, Inc. (HCE) on Loxahatchee River District projects through September 8, 2022. **Note: Any information that is historical or repeated from previous months are shown in italics. Otherwise, all information as shown below is newly reported information.**

Lift Station No. 082 Improvements

- HCE has updated the site plan to revise the generator location from the north side of the lift station to the west side of the lift station. The location was revised for two reasons, potential safety concerns for fall protection due to existing grade elevations, and due to the height of the generator, potential vehicle line of site issues for vehicles entering and existing the plaza. The updated plan was submitted to the property manager of the shopping plaza and HCE received written confirmation that the revised location was approved. HCE is currently working with the surveyor to obtain the sketch and legal description for preparation of the easement for the generator area that will be granted to the District.

  Schedule Update: *HCE has reviewed the updated schedule submitted by the Contractor. HCE has prepared Change Order #3 for the time extension request, extending the contract completion date from August 16, 2022 to February 2, 2023. The change order request will be forwarded to the District for consideration.*

Country Club Drive Force Main Transmission System Preliminary Evaluation

- *The draft technical memorandum was submitted to the District on June 10, 2022 for review and comment. Upon receipt of the comments from the District, the memorandum will be finalized and transmitted to the District.*

  Schedule Update: *Per the work authorization agreement, upon receipt of comments from the District on the draft memorandum, the final memorandum will be prepared and submitted within two weeks.*

Lift Station Telemetry Improvements

- HCE is working with the Contractor and the electrical engineer on control panel design and submittal items. The Contactor has completed site visits to several lift stations and will be

completing site visits of all lift stations covered under this project. A progress meeting was hold on September 6, 2022 to review and discuss items pertaining to the cellular networks.

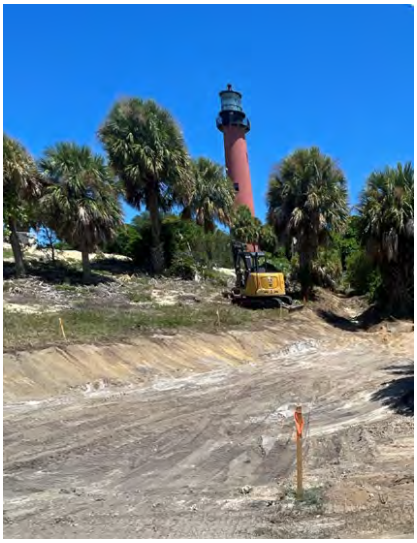
Schedule Update: *The Notice to Proceed (NTP) has been issued for August 8, 2022. Substantial completion is 595 days from the NTP, March 25, 2024 and final completion is 660 days from the NTP, May 29, 2024. The schedule provided from the Contractor currently shows them mobilizing and starting installation in April 2023 and completing construction in January 2024.*

Rolling Hills Gravity Sewer System, Lift Station, & Force Main

- Construction work is ongoing for the project. The lining of the gravity sewer mains, installation of the discharge force main, and all asphalt pavement restoration is now complete. Remaining work includes final completion of the lift station, manhole rehabilitation, and lining and repairs of the existing service laterals. HCE has processed four payment applications to date for the project. HCE has executed the change order for proposed inside drops at three manhole locations due to existing outside drops found when excavating.

  Schedule Update: *The current contract substantial completion date is August 13, 2022 and final completion date is October 17, 2022. Construction progress is steady and moving forward. The Contractor has provided documentation that the lead time for the control panel for the lift station has been extended by the supplier and is not anticipated to be delivered until sometime in October. The Contractor has requested a time extension showing completion by the end of the year*. The Contractor has provided an updated schedule based upon the anticipated delivery date of the control panel. HCE is currently preparing a time extension change order to be forwarded to the District for consideration.

Jupiter Inlet Lighthouse Septic to Sewer Conversion



- During the month of August, HCE staff have been onsite observing construction efforts. Water mains, gravity sewer, and low-pressure force main installation has progressed in conjunction with the contractor's construction schedule. August milestones include the completion of the new 8" water main tie-in at Beach Rd, the installation of three low pressure simplex lift stations and the installation of five gravity sewer laterals. HCE has continued ongoing coordination of construction activities with the archaeologist who is performing cultural resources monitoring throughout the duration of construction. Photo to right depicts the new dry detention area, specifically designed to help channel future heavy rainfall, and mitigate and potential erosion of this pristine historical site. The Town of Jupiter approved the easement agreements at the September 6, 2022 council meeting. The permit to work within the Town

of Jupiter property is anticipated to be issued this week. Change Order #1, which is a no-cost change order proposal for adding a duplex commercial grinder station for a new proposed restroom facility and eliminating a section of the gravity system and installing specific sections of the water main system via horizontal directional drill in lieu of open cut in order to protect existing vegetation and landscaping, has been executed by HCE and the Contractor.

Schedule Update: *The current substantial contract completion date is September 9, 2022 and final contract completion date is December 5, 2022. The most recent schedule provided by the Contractor on July 12, 2022 stills showing them completing all work by the end of September. HCE will continue to monitor the Contractor's progress and address any approved time extension requests via change order. It is anticipated that due to delays in issuance of the Town of Jupiter permit a time extension request will be submitted.*

Deep Injection Well Replacement Cost Study

- Comments from District staff on the technical memorandum were received on August 29, 2022. A review meeting with HCE and District staff was held on September 8, 2022. Based upon the meeting, additional information will be provided in the final technical memorandum providing a life cycle cost analysis and breakdown of operation and maintenance costs of the presented options. After all comments are addressed, and additional information inputted, the final memorandum will be completed and submitted to the District.

  Schedule Update: The final memorandum will be completed and submitted to the District three weeks after all additional required information is gathered. The time frame to gather an analyze the additional information will also be provided to the District.

Injection Well Pump Manual Transfer Switch Addition

- The HCE team has reviewed and returned all submittals provided by the Contractor. The most recent schedule submitted by the Contractor shows them mobilizing at the end of October 2022 and completing all work by the beginning of December 2022. Once the contractor adequately answers and addresses all comments on the schedule, a time extension change order will be prepared and submitted to the District for consideration.

  Schedule Update: *The current substantial contract completion date is August 13, 2022 and final contract completion date is October 17, 2022. Due to the delay in procurement of materials the contractor will be submitting a request for a time extension once delivery dates are confirmed. The request will be forwarded via change order request for the District's consideration.*

Master Lift Station No. 1 Traveling Bridge Crane Solicitation

- The Contactor and crane manufacturer MHS have reached substantial completion of the project. Construction efforts have carried through the month of August leaving punch list items to be completed in September. HCE was onsite daily monitoring construction activities and coordinating with District staff. The installation of the crane system is complete. A start-

up for the crane system occurred on August 31, 2022 and a safety training conducted by the crane manufacturer was held on September 7, 2022. This important training is imperative to keep District staff well versed in all safety and operational functions of this new system.

Schedule Update: The current substantial contract completion date is July 21, 2022 and final contract completion date is September 24, 2022. It is anticipated that the Contractor should be able to complete all punch list items before the contract completion date.

Emergency Response ESRI Collection Tool & Synovia Vehicle Tracking Assistance

- *No new activities have occurred for this work.*

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ENGINEERS • PLANNERS • SCIENTISTS • CONSTRUCTION MANAGERS
1425 W Cypress Creek Road, Suite 101 • Fort Lauderdale, FL 33309 • Phone 954-776-1616

Loxahatchee River Environmental Control District
Master Plan 20-AC "Sierra Square" @ 9278 Indiantown Rd
LRECD PO# 21-0649 / KCI #482021095.01

Progress Report

To: Mr. Kris Dean, P.E., Deputy Executive Director/Director of Engineering

From: Todd Mohler, RLA, KCI, Project Manager

Date: September 9, 2022

ACTIVITIES

KCI Technologies progress report updates for the current billing period are:

Activities and Support:

1. **Survey**: Complete.
2. **Environmental**: Complete.
3. **Geotechnical**: Complete.
4. **Electrical Engineering:** 90% Complete.
5. **Civil Engineering**: Finalized grading analysis and budget estimate. Presented at workshop for Board of Directors on 6/28/22. Task 2 deliverables (pre 30% conceptual grading and utilities) delivered 9/9/22. Will finalize to 30% in Task 3.
6. **Landscape Architecture**: Finalized budget estimate and revised Site Plan per previous comments. Presented at workshop for Board of Directors on 6/28/22. Received go ahead from Client, will finalize in Task 3.
7. **Architecture**: 90% Complete.

MOCK • ROOS
CONSULTING ENGINEERS

September 7, 2022

Mr. Kris Dean, P.E.
Deputy Executive Director/Director of Engineering
Loxahatchee River Environmental Control District
2500 Jupiter Park Drive
Jupiter, FL 33458

Ref. No. C0089.40
Subject: Loxahatchee River Subaqueous Forcemain Replacement
PO No. 22-0911

Dear Mr. Dean:

Below is our Monthly Update for August 2022.

Schedule:

- PO No. 22-0911 issued on June 17, 2022.
- The Project is on schedule with the following upcoming dates:
  - 60% Submittal October 15, 2022
  - Permit Submittals November 14, 2022
  - 95% Submittal December 29, 2022
  - 100% Submittal January 28, 2023

Upcoming Activities:

- Ongoing coordination between Consultant, District and Consultant's surveyor.
- Ongoing coordination with Utilities Companies.
- Topographic Field Survey 90% complete.
- Topographic Survey Basemap preparation in progress.
- Plat Review currently underway.
- Construction Drawings preparations currently underway.

If you have any questions, please contact me at 683-3113, extension 293.

Sincerely,
MOCK, ROOS & ASSOCIATES, INC.

Garry G. Gruber, P.E.
Senior Vice President

GGG:tsm
Copies: John Cairnes
Spencer Schroeder

Busch Wildlife Sanctuary

The 3rd Quarter Report will be presented
at the October 2022 Board Meeting.

Director's Report

- Admin. & Fiscal Report attach. #1
- Engineering Report attach. #2
- Operations Report attach. #3
- Information Services Report attach. #4
- Environmental Education attach. #5
- Safety Report attach. #6
- Other Matters (as needed) attach. #7

LOXAHATCHEE RIVER DISTRICT
2500 JUPITER PARK DRIVE, JUPITER, FLORIDA 33458 TEL: (561) 747-5700 FAX: (561) 747-9929
D. Albrey Arrington, Ph.D. EXECUTIVE DIRECTOR loxahatcheeriver.org

MEMORANDUM

To: Governing Board
From: Kara Fraraccio, Director of Finance and Administration
Date: September 9, 2022
Subject: Monthly Financial Report

Cash and Investments

Balance as of August 31, 2022
Certificates of Deposit:

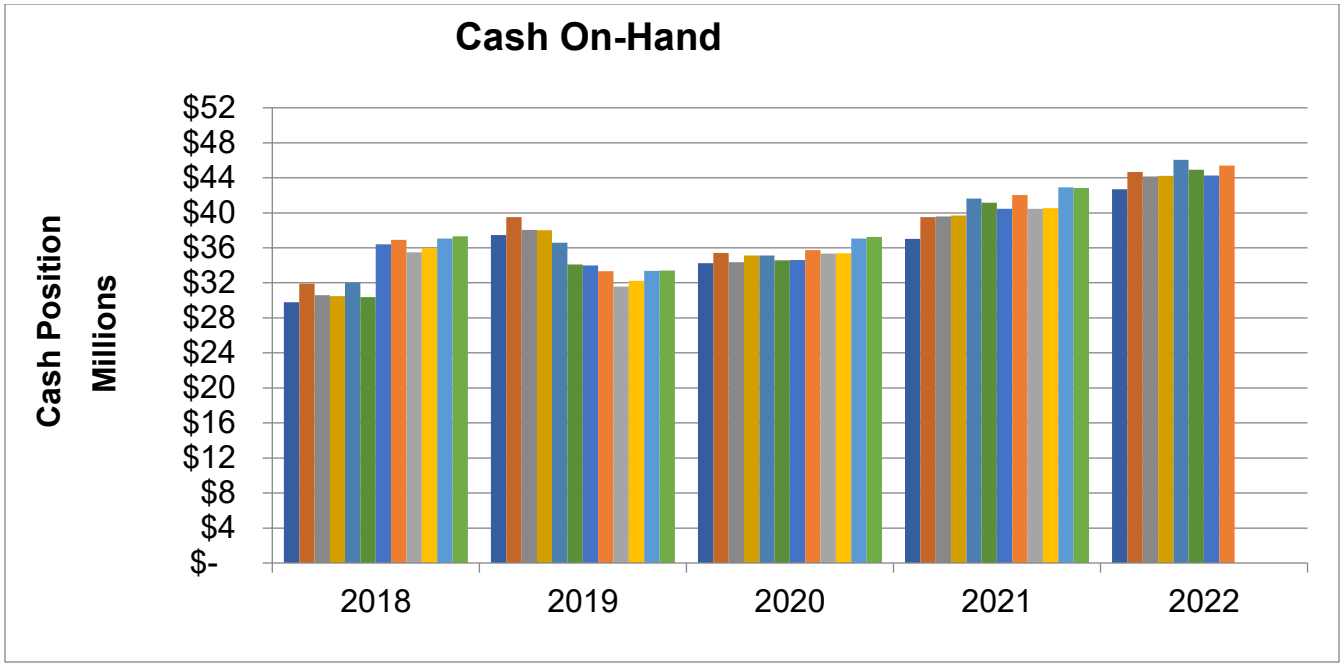
Institution	Original Term	Maturity	Rate	Book Value	Monthly Interest Earned	Market Value
Bank United	3 Months	11/16/22	1.98%	$ 1,055,237	$ 859	$ 1,056,096
Bank United	3 Months	11/16/22	1.98%	1,574,277	1,281	1,575,558
TD Bank	6 Months	02/04/23	3.06%	2,500,000	4,820	2,504,820
TD Bank	9 Months	05/05/23	3.22%	2,500,000	5,073	2,505,073
TD Bank	9 Months	05/08/23	3.35%	1,274,425	2,456	1,276,882
Bank United	9 Months	05/16/23	2.13%	1,003,248	877	1,004,125
TD Bank	12 Months	08/10/23	3.36%	2,000,000	3,866	2,003,866
Bank United	12 Months	08/16/23	2.42%	1,004,118	999	1,005,116
Bank United	12 Months	08/16/23	2.42%	1,004,118	999	1,005,116
US Century Bank	13 Months	09/22/23	2.71%	2,500,000	1,672	2,501,672
Subtotal				**$ 16,415,423**	**$ 22,902**	**$ 16,438,324**
Investment Accounts:						
Synovus - Public Demand			2.00%		$ 6,469	$ 7,382,637
Florida Prime - SBA			2.26%		3,855	2,008,908
Subtotal					**$ 10,324**	**$ 9,391,545**
Checking Account:						
SunTrust-Hybrid Business Account			0.02%		$ 182	$ 16,158,008
Subtotal					**$ 182**	**$ 16,158,008**
Brokerage Accounts:					**Gain/Loss**	
Vanguard GNMA ADM			-10.22%	$ 433,852	(40,214)	$ 393,638
Vanguard Short-Term Treasury			-4.30%	1,333,991	(55,022)	1,278,969
Vanguard Short-Term Inflation			-4.96%	129,373	(6,117)	123,256
U.S. Treasuries - Due 11/22/22			2.57%	99,279	90	99,369
U.S. Treasuries - Due 11/25/22			2.78%	496,553	135	496,689
U.S. Treasuries - Due 12/01/22			2.68%	496,313	54	496,366
Charles Schwab Bank Sweep						516,771
Subtotal				**$ 2,989,361**	**$ (101,074)**	**$ 3,405,058**
Total					**$ (67,666)**	**$ 45,392,935**

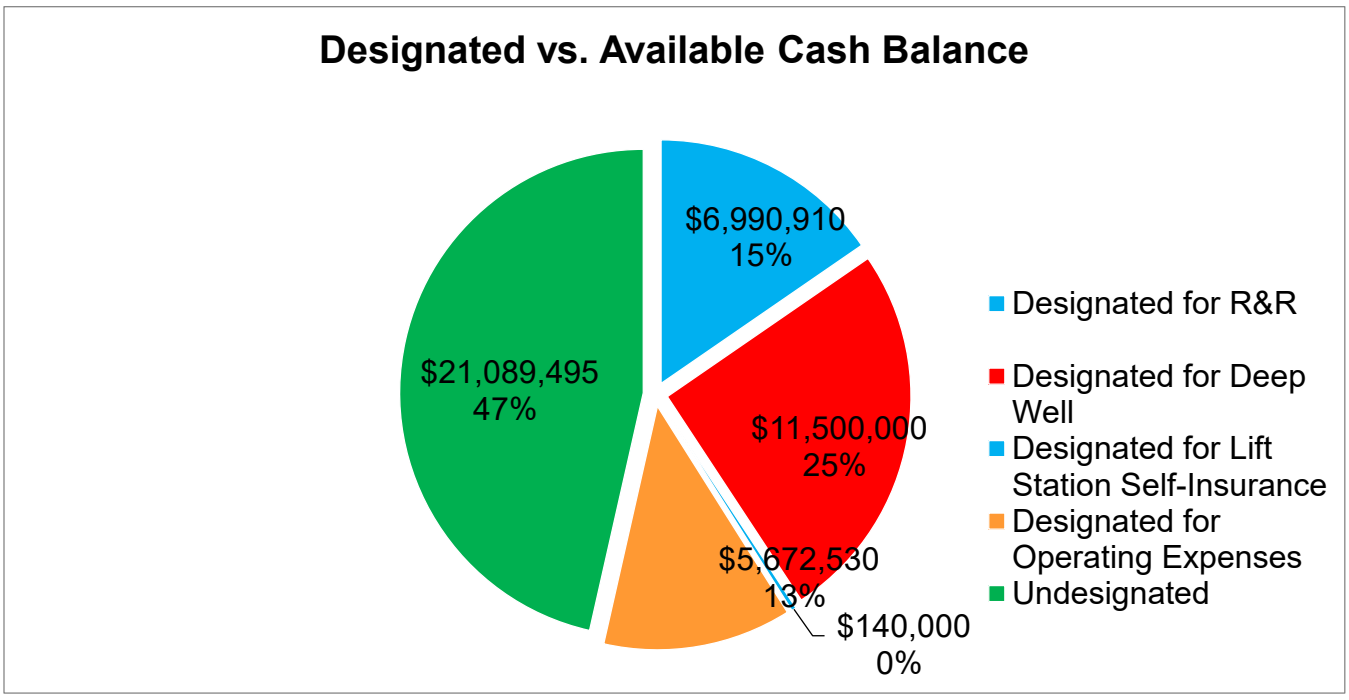
Average weighted rate of return on investments is: 1.28%

As of 8/31/22:
3 month Short Term Bond: 2.87%
1 month Federal Fund Rate: 2.33%

During the month of August, interest rates hiked. In response, the District reinvested all CD's with Bank United for higher rates. In July, the highest earning CD at Bank United was earning a rate of 0.6% compared to the current lowest rate at Bank United earning a rate of 1.98%. The District also closed the TD Bank Money Market account earning .75% and purchased CD's with varying maturities all earning over 3%. The District transferred $1,500,000 to the brokerage account to invest in U.S. Treasury Bills. These treasury purchases were staggered, with the last purchase made on September 6. The bond funds in the District brokerage accounts are still underperforming due to abnormal market conditions and uncertainties with the Federal Reserve. However, the District is optimistic that losses will be recovered and that we have an optimized portfolio based on risk and cash flow needs.

Cash position for August 2021 was $42,047,326. Current Cash position is up by $3,345,609.





Financial Information

- Legal Fees billed in August were $3,540. The fiscal year-to-date total is $65,560.
- Estoppel fees collected in August totaled $6,540. The fiscal year-to-date total is $81,285.
- There was no Septage billing for the month of August.
- Developer's Agreement – There were no new Developer Agreements.
- I.Q. Water Agreements –Tuscany Abacoa is past due for August.

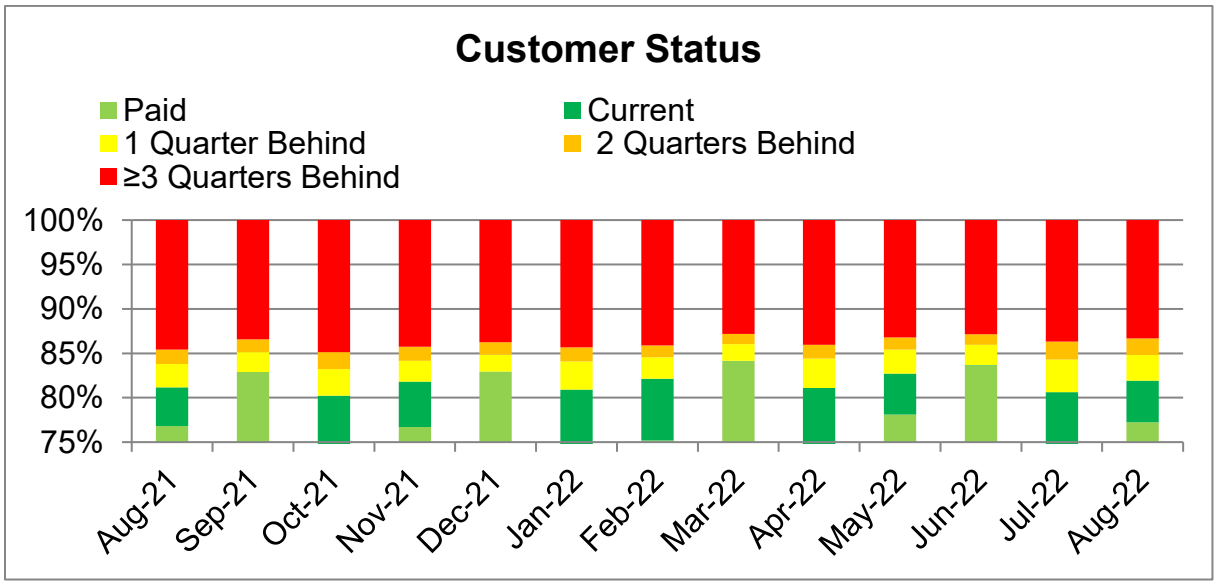
Summary of Budget vs. Actual

Budget Benchmark *92%*	Aug-22 Actual	YTD Actual	FY 22 Budget	Favorable (Unfavorable)	Budget Expended	Aug-21 YTD
Revenues						
Operating Revenues						
Regional Sewer Service	$ 1,412,787	$ 15,703,200	$17,100,000	$ (1,396,800)	91.83%	$15,286,921
Standby Sewer Service	9,028	104,774	73,000	31,774	143.53%	86,998
IQ Water Charges	194,562	2,116,029	2,326,000	(209,971)	90.97%	2,076,170
Admin. and Engineering Fees	465	31,475	38,000	(6,525)	82.83%	47,419
Other Revenue	54,831	485,149	424,490	60,659	114.29%	375,838
Subtotal Operating Revenues	1,671,673	18,440,627	19,961,490	(1,520,863)	92.38%	17,873,346
Capital Revenues						
Assessments	$ (3,617)	$ 1,293,029	1,188,997	104,032	108.75%	2,196,579
Line Charges	3,212	167,215	287,000	(119,785)	58.26%	229,263
Plant Charges	8,565	539,799	898,000	(358,201)	60.11%	630,162
Capital Contributions		14,731	800,000	(785,269)	1.84%	
Subtotal Capital Revenues	8,160	2,014,774	3,173,997	(1,159,223)	63.48%	3,056,004
Other Revenues						
Grants		351,500		351,500		
Interest Income	4,262	594,167	613,000	(18,833)	96.93%	704,220
Subtotal Other Revenues	4,262	945,667	613,000	332,667	154.27%	704,220
Total Revenues	$ 1,684,095	$ 21,401,068	$ 23,748,487	$ (2,347,419)	90.12%	$ 21,633,570
Expenses						
Salaries and Wages	$ 478,781	$ 5,507,517	$6,522,000	$ 1,014,483	84.45%	$4,862,036
Payroll Taxes	35,047	398,944	470,200	71,256	84.85%	350,292
Retirement Contributions	65,196	766,967	946,800	179,833	81.01%	709,058
Employee Health Insurance	122,575	1,305,401	1,558,400	252,999	83.77%	1,165,682
Workers Compensation Insurance		56,802	73,700	16,898	77.07%	48,612
General Insurance		389,675	374,995	(14,680)	103.91%	358,803
Supplies and Expenses	71,192	985,241	1,036,285	51,044	95.07%	822,645
Utilities	134,363	1,362,160	1,407,908	45,748	96.75%	1,156,690
Chemicals	44,233	382,294	503,000	120,706	76.00%	276,599
Repairs and Maintenance	104,711	1,603,685	1,858,362	254,677	86.30%	1,537,588
Outside Services	112,677	1,656,278	2,040,930	384,652	81.15%	1,892,367
Contingency			225,000	225,000	0.00%	
Subtotal Operating Expenses	1,168,775	14,414,964	17,017,580	2,602,616	84.71%	13,180,372
Capital						
Capital Improvements	$ 771,901	$ 3,958,410	10,537,513	6,579,103	37.56%	3,201,235
Subtotal Capital	771,901	3,958,410	10,537,513	6,579,103	37.56%	3,201,235
Total Expenses	$ 1,940,676	$ 18,373,374	$ 27,555,093	$ 9,181,719	66.68%	$ 16,381,607
Excess Revenues Over (Under) Expenses	$ (256,581)	$ 3,027,694	$ (3,806,606)	$ 6,834,300		$ 5,251,963

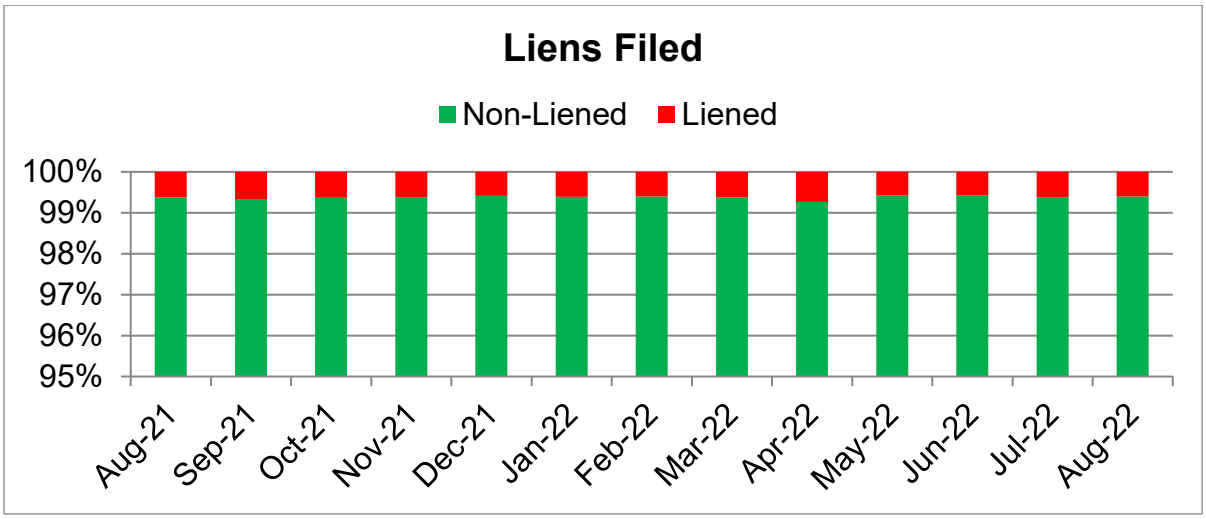
Total Capital expenses incurred and encumbered totalled $14,010,739 or 133% of the capital budget. This includes funds encumbered in a prior fiscal year for projects that stretch across multiple fiscal years.

Accounts Receivable

The chart below illustrates customers' receivable status as a percentage of quarterly sewer billing. Paid or current balances represent approximately 82% billing.



The District serves approximately 33,149 customers. Currently, the District has 199 liens filed which represent approximately 1% of our customers.



Pending/Threatened Litigation

- Vehicle Accident – The District received a legal summons related to a vehicle accident involving a District vehicle. This claim is currently being handled through the District's General Liability Insurance provider, PRIA. PRIA has assigned the firm of Roberts, Reynolds, Bedard & Tuzzio, PLLC to represent the District.
- Beacon Lane – The District received a formal notice that a negligence claim is being made on behalf of a resident on Beacon Lane from injuries sustained as a result of septic and sewage over-flow at the property. We notified the District's legal counsel, the project engineers, the contractor, and the District's General Liability Insurance provider, PRIA.

FEMA

On August 15, 2022, FEMA notified the District that our FEMA project related to Hurricane Irma was officially closed out. The final inspection resulted in a zero-dollar variance of the amended amount of $181,036.25. This project was executed in June 2018, after Hurricane Irma, and the District was fully reimbursed on November 2, 2018. The time period between reimbursement and close out is due to the FEMA review process.

Retirement Plan Administrative Committee Update

On September 7, 2022, the Retirement Plan Administrative Committee met in the Governing Board room to discuss the Second Quarter Retirement Plan results. As of June 30, 2022, the Plan had 82 participants with participant assets totalling $10,229,468. The majority of the Plan's balance continues to be in the Self-directed Brokerage accounts (68.1%); however, that percentage is expected to decline with new contributions coming in and going to the funds in the Core Line-up. Two funds in the Core Line-up are on the "Watch List:" T. Rowe Price Growth Stock Fund and Western Asset Core Plus Fund, due to long-term performance being below the index and median of the peer group for the 3 and 5-year periods. The Administrative Committee recognized that while these funds are flagged for review, we have deemed the funds still meet the fundamental credentials of the investment line up. The Administrative Committee talked in length about the performance of the American Funds Target Date Funds (the District's Qualified Default Fund), noting the funds are performing well against its peers, with the 5 year rate of return varying from 4.62% to 7.35% (depending on expected retirement date).

The Administrative Committee discussed (1) updating the District's Personnel Policies and Procedures, section 5.1 Retirement Plan, to update the language in the document to reflect our current Plan information and (2) amending the Plan to delete language which allows for part-time, seasonal, temporary, or interns to enter the Plan.

LOXAHATCHEE RIVER DISTRICT
2500 JUPITER PARK DRIVE, JUPITER, FLORIDA 33458 TEL: (561) 747-5700 FAX: (561) 747-9929
D. Albrey Arrington, Ph.D. EXECUTIVE DIRECTOR loxahatcheeriver.org

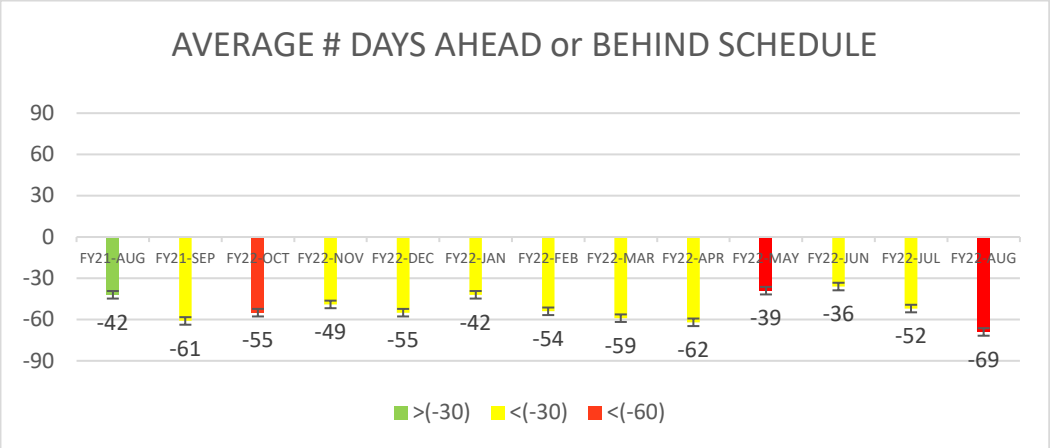
MEMORANDUM

TO: D. Albrey Arrington, Ph.D., Executive Director
FROM: Kris Dean, P.E., Deputy Executive Director/Director of Engineering Services
DATE: September 7, 2022
SUBJECT: Capital Program and Engineering Services Report

Capital Projects

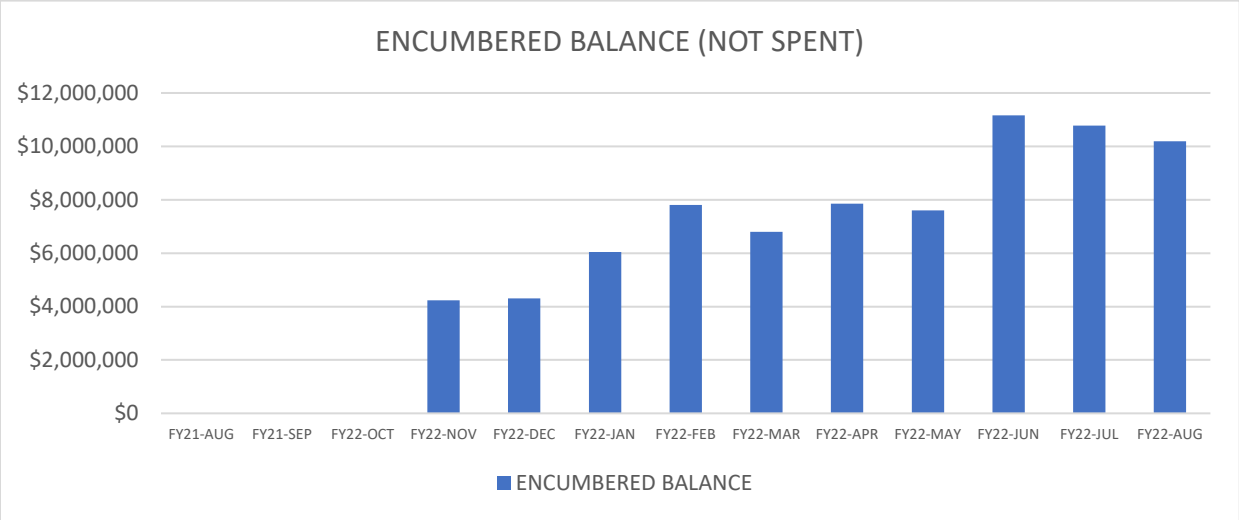
Capital Schedule (FLOAT = -69 Days)

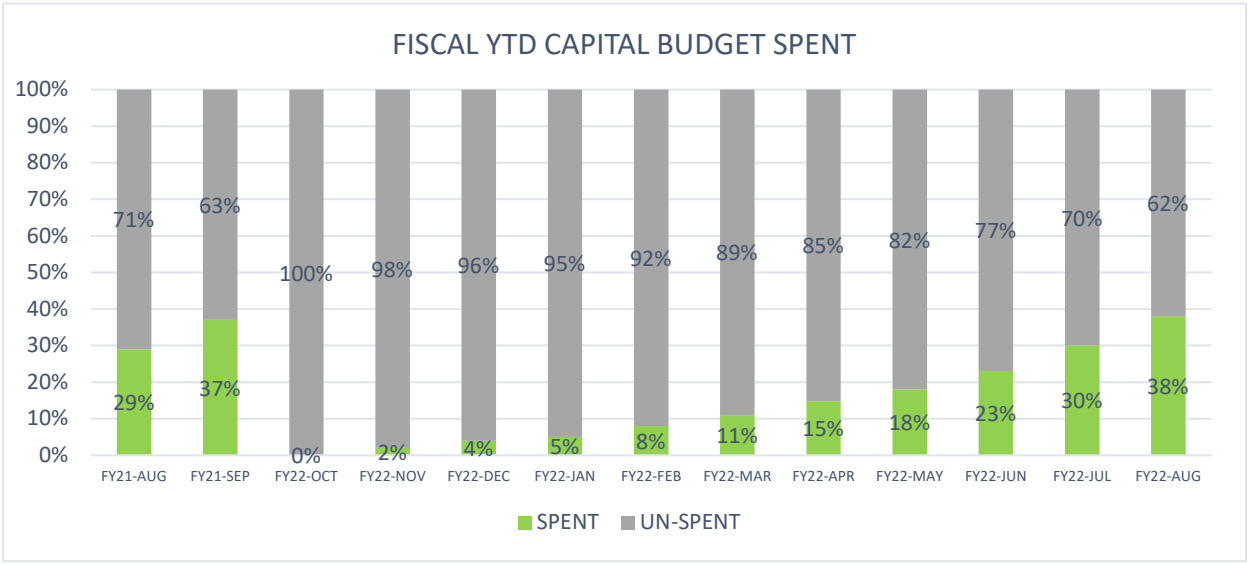
The overall Capital Program schedule slipped through August with confirmed delays for fleet deliveries, Headworks Generator and IW Pump Emergency Generator Connection. Delays are due to procurement of materials and equipment.



Capital Budget

Encumbered Balance (unspent encumbered funds) continues to decrease slowly as spending out paces new encumbrances as we near the end of the 2023 fiscal year.





Project Updates

Science Center and Jupiter Inlet Lighthouse Outstanding Natural Area (aka: BLM House Renovations): The consultant is working on comments to the 100% plans and specifications. Staff have scheduled the following bidding and award program.

Advertise: 10/2/2022

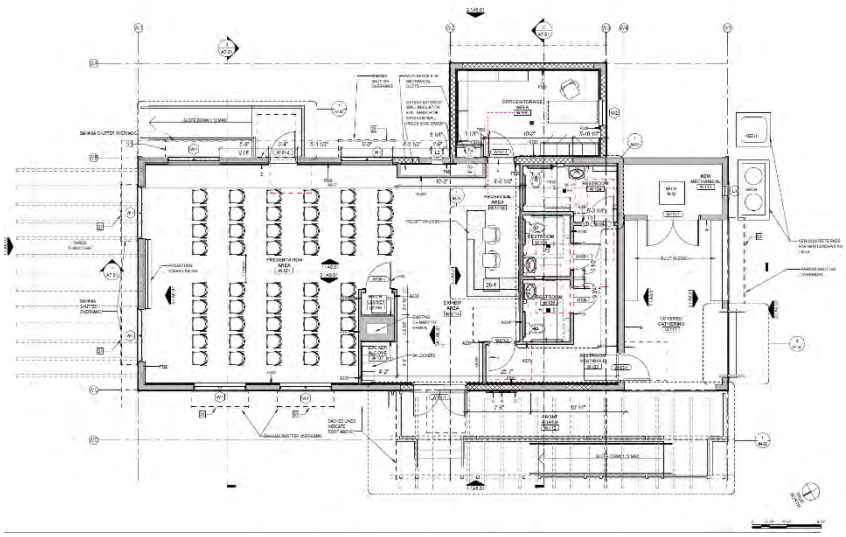
Pre-Bid Meeting: 10/18/2022

Bids Due: 11/1/2022

Bonds Due: 11/3/2022

Recommendation of Award due: 11/9/2022

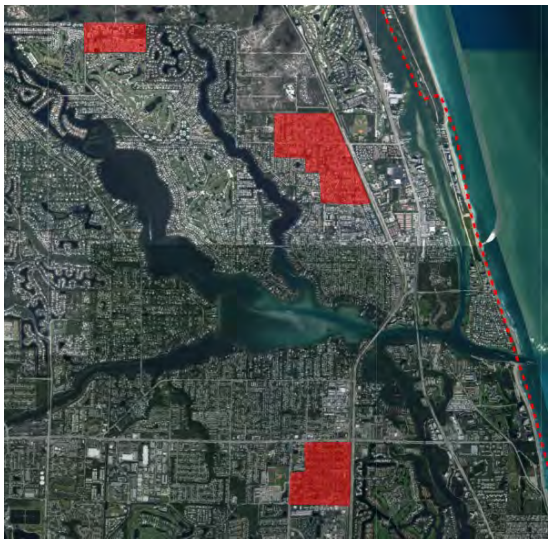
Award: 11/17/2022



2500 Jupiter Park Drive Site Planning: Since the presentation to the Board in May of this year staff and the consultant have continued to make progress on the massing study, architectural programming, potential treatment facility footprint and security review. Once these components are complete staff will provide revised site plans for Board discussion and consideration.

20 Acres: Since the presentation to the Board in June of this year the consultant is proceeding with the conceptual master plan development including preliminary civil, electrical and schematic floor plans based on the presented site plan. This will be followed by completion of the Final Conceptual Master Plan, currently scheduled for December 2022.

In-house Projects



Gravity System Rehabilitation – Cleaning, TV Inspection and Lining: The contractor demobilized in August to address equipment issues and will remobilize after Labor Day. The overall project schedule shows completion through LS018 and LS041 collection system this fiscal year and LS054 collection system by December 2022.

Lift Station Rehabilitations General Construction Services: Site visits and design have commenced based on the prioritized inspection reports. Engineering is working on design and project set up in EAM to ensure the work moves into construction.

Work is complete at LS059 and LS112. LS266 and LS089 are in scheduling. LS064 and LS233 are in design. The new work flow continues to work well with defined coordination between Collections, Inspections, Engineering and Construction.

Neighborhood Sewering/Remnant Properties:

5331 Center St.: Design and permitting are complete for 5331 Center Street. Staff is coordinating with a general services contract for pricing and installation. This project includes a single service to be installed in easements coordinated by the property owner. Staff anticipate completion by the end of September.

18041 and 18049 69th Terrace: The property owner at 18041 69th Terrace provided easements and requested staff install sewers to a proposed two-unit residential project. Design and permitting are complete. Staff is coordinating with a general services contract for pricing and installation. This project includes a double service to be installed in easements. Staff anticipate completion by the end of September.

18150 SE Woodbridge Lane: Staff is in design and permitting. The project includes a single service to be installed in right of way. Staff anticipate construction completion by September.

Other: Recent activity with Statutory Way of Necessity has postponed staff focusing on other remnant properties. Staff will begin working this Fall with IT and customer service to re-evaluate our system to confirm remnant areas on public right of way or with easement access have all been served.

Statutory Way of Necessity:

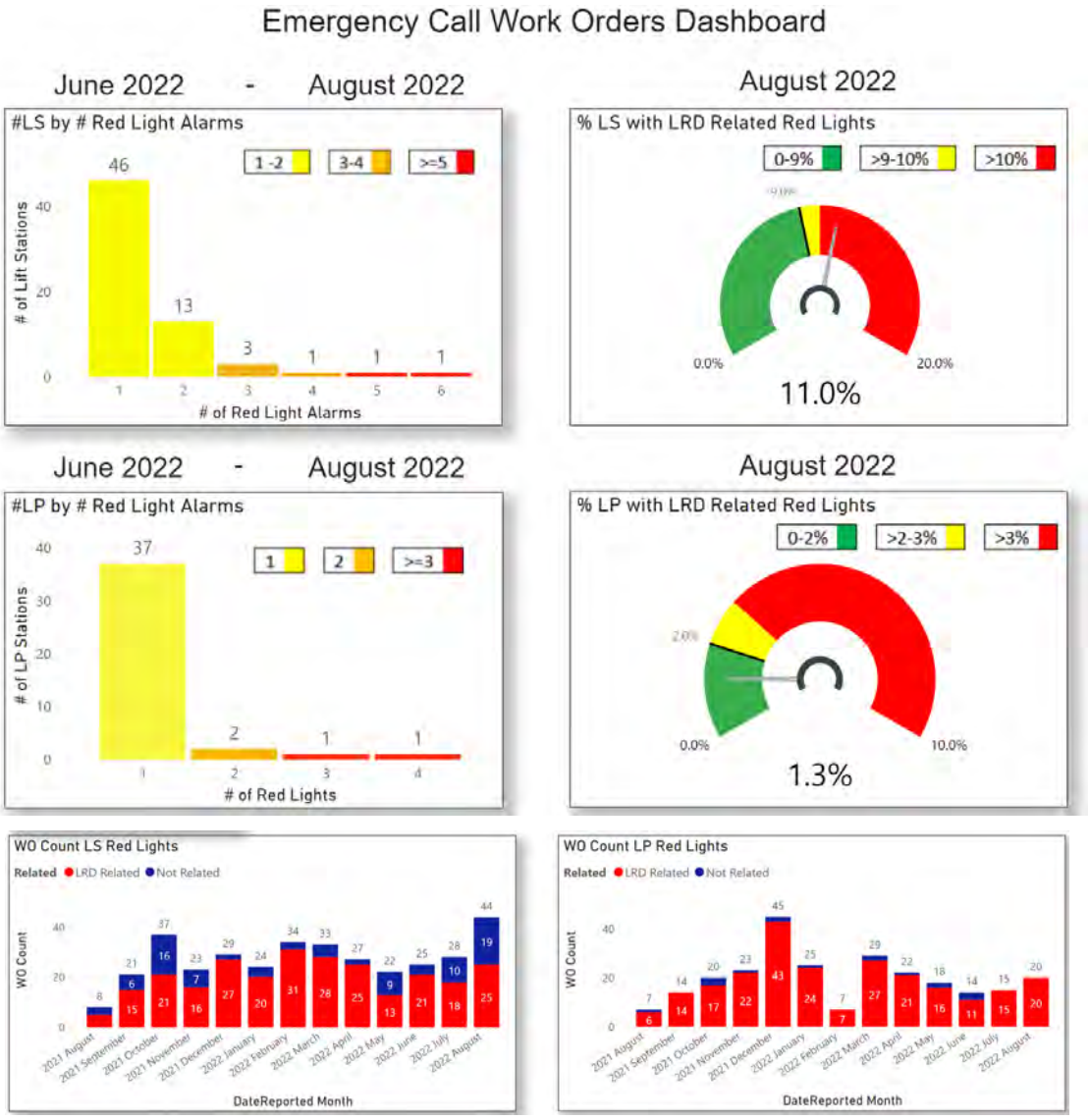
Jamaica Drive Low Pressure Sewer: Over the last two years staff has been coordinating with two property owners for utility easements to install sewers to their properties on Jamaica Drive without success. At this time both property owners have determined Statutory Way of Necessity is the preferred option and entered into letter agreements for staff to proceed on their behalf.

Design and permitting are complete and total cost attributed to the affected properties determined. Staff are coordinating with property owners for final agreements and pricing per the statutory way of necessity procedures.

COLLECTIONS AND REUSE DASHBOARD

Lift Station Red Lights: This month the system experienced 64 total red lights. 44 lift station red lights (with 8 stations experiencing multiple red light events) and 20 low pressure red lights (with 4 stations experiencing multiple red light events).

This month staff has revised the monthly redlight report, the dial for August excludes redlights due to FPL power failure since staff have no mechanism to impact FPL performance during inclement weather or other power outages. Staff continue to include FPL power outages in the 3-month rolling average for repeat stations and work order counts to facilitate FPL coordination on problem areas and potential use of portable standby power to ensure continuity of service.



Air Release Valves: The ARV evaluation process has resulted in 150 ARVs inspected year to date (August 12, 2022). Of all inspected ARV's from beginning of reporting, January 2020, 111 are out of service. Board members have requested trending be provided for ARVs out of service. Staff are working on revisions to provide this.

MONTHLY ARV INSPECTIONS

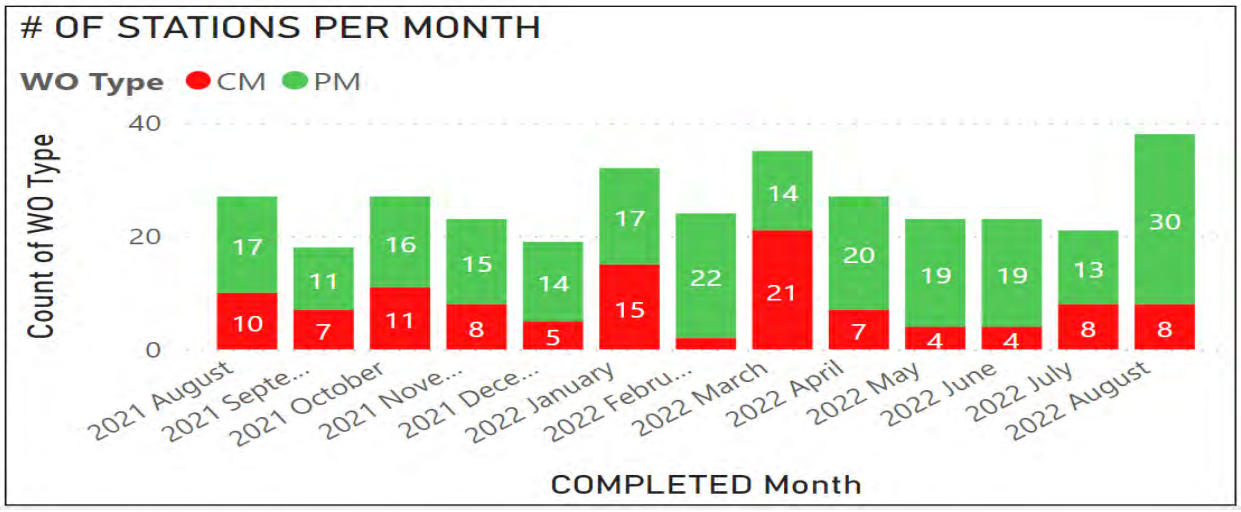
Visits

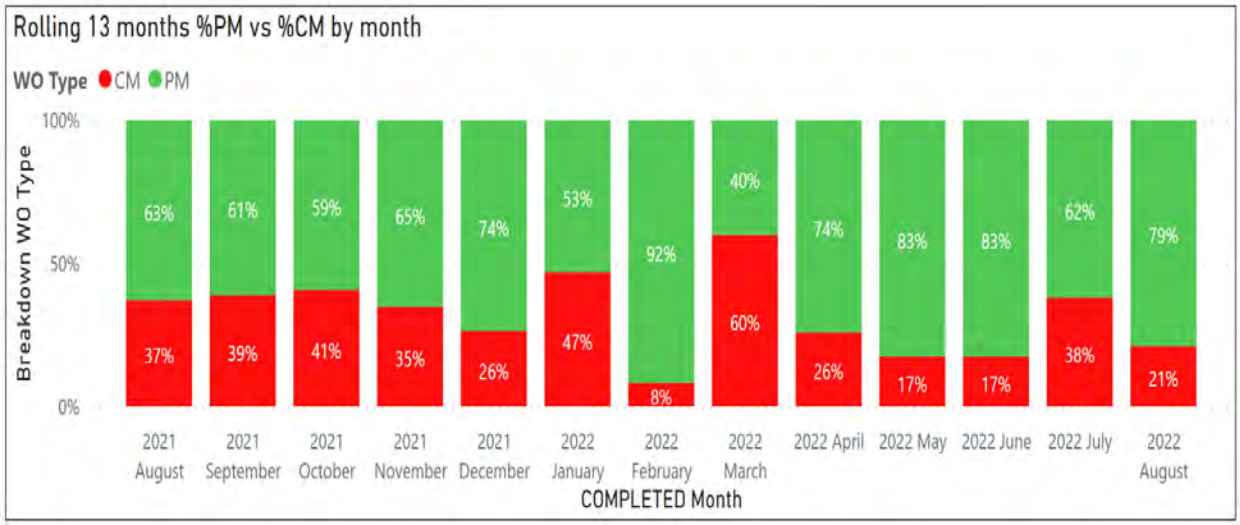
Year	January	February	March	April	May	June	July	August	September	October	November	December	Total
2020	25	35	63	39	23	33	14	24	56	17	15	13	**285**
2021	11	33	58	88	34	33	11	23	41	19	24	21	**291**
2022	5	20	23	30	33	43	7	7					**155**

Out of Service

112

Wet Well Cleaning: Unscheduled wetwell cleanings totaled 8 for the month.





UNAUTHORIZED DISCHARGES (fka SANITARY SEWER OVERFLOWS)

There were 4 unauthorized discharges in the collection-transmission-distribution system this month.

On August 1, 2022, the Loxahatchee River District (LRD) had an unauthorized discharge of five gallons of sewage at a private residence low pressure system (LP0308) located on SE Federal Highway, Jupiter, FL. The unauthorized discharge was caused by a blown fuse on the low-pressure system service disconnect. The unauthorized discharge was stopped by the residents not using water until a repair could be made. The five (5) gallons of unauthorized discharge were absorbed into the soil and the affected area was disinfected with lime. No known storm drains or bodies of water were affected.

On August 11, 2022, the Loxahatchee River District (LRD) had an unauthorized discharge of five gallons of sewage at a private residence low pressure system (LP0418) located on Pointe Lane East, Jupiter, FL. The unauthorized discharge was caused by a failed low-pressure system control panel main breaker. The unauthorized discharge was stopped by the residents not using water while the repair was made. The unauthorized discharge was absorbed into the soil and the affected area was cleaned with potable water. No known storm drains or bodies of water were affected.

On August 14, 2022, the Loxahatchee River District (LRD) had an unauthorized discharge of twenty-five gallons of sewage at a private residence low pressure system (LP1084) located on Rolling Green Road, North Palm Beach, FL. The unauthorized discharge was caused by a cracked 2-inch PVC low-pressure pipe fitting. The unauthorized discharge was stopped by closing an inline low-pressure main valve (LS130-VL050) and disabling the private residence low-pressure system until repairs could be made. Twenty gallons of the unauthorized discharge were recovered with an LRD vacuum truck and five gallons were absorbed into the soil. The affected area was cleaned with potable water and disinfected with lime. No known storm drains or bodies of water were affected.

On August 31, 2022, the Loxahatchee River District (LRD) had an unauthorized discharge of five gallons of sewage at a private residence low pressure system (LP0287) located on Saturn Lane, Juno Beach, FL. The unauthorized discharge was caused by a cracked PVC low-pressure check valve. The unauthorized discharge was stopped by closing the low-pressure service valve and disabling the private residence low-pressure system until repairs could be made. Five gallons of the unauthorized discharge were absorbed into the soil. The affected soil was recovered with an LRD vacuum truck and the area cleaned with potable water. No known storm drains or bodies of water were affected.

LOXAHATCHEE RIVER DISTRICT
2500 JUPITER PARK DRIVE, JUPITER, FLORIDA 33458 TEL: (561) 747-5700 FAX: (561) 747-9929
D. Albrey Arrington, Ph.D. EXECUTIVE DIRECTOR loxahatcheeriver.org

MEMORANDUM

TO: Albrey Arrington, Ph.D., Executive Director

FROM: Jason A. Pugsley, P.E., Operations – Plant Manager

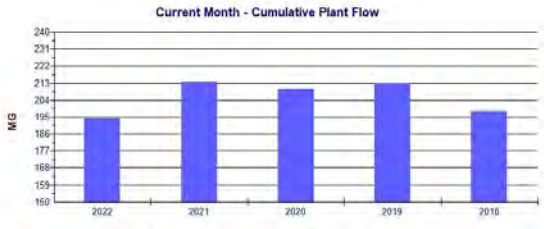
DATE: September 8, 2022

SUBJECT: August 2022 Operations Department Monthly Report

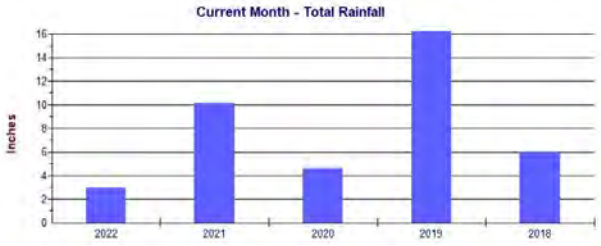
Treatment Plant Division/Maintenance Department

Overall, the month of August was productive with all monthly reports prepared and submitted on time. There were no permit exceedances this month. The treatment plant generally operated efficiently and met all treatment objectives. During the month, influent flows to the plant were on the same order of magnitude as the previous month. The plant experienced one (1) unauthorized discharge during the month August. The unauthorized discharge resulted in approximately 1-gallon of highly disinfected reclaimed water being released onto the ground. The discharge occurred due to a leaking fitting on an above grade 2-inch stainless steel on the non-potable, plant process water piping system. The chlorine residual at the time of the discharge was approximately 4.18 milligrams per liter (mg/L). In accordance with the applicable regulatory requirements, the ground around the area where the discharge occurred was disinfected with lime. The discharge was documented and reported to the appropriate regulatory agencies.

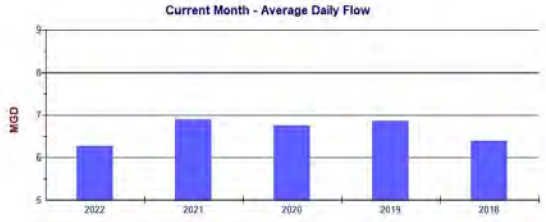
Graphical summaries of the plant flows and rainfall during the month of August, including comparisons with plant flows during the previous month (i.e., July 2022), are presented below.



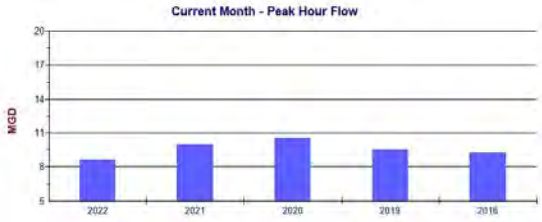
The Cumulative Influent Flow to the plant for the month of August was 194.31 million gallons. This is slightly greater than the July flow of 193.01 million gallons.



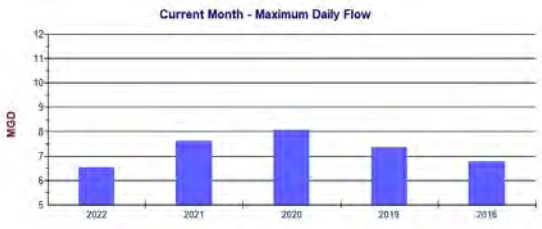
2.94 inches of total rainfall was recorded at the plant site during the month of August. This is significantly less than the July rainfall recorded of 5.51 inches.



The Average Daily Flow (ADF) for the month of August was recorded at 6.27 MGD compared to 6.23 MGD during the month of July and 6.89 MGD during August 2021.

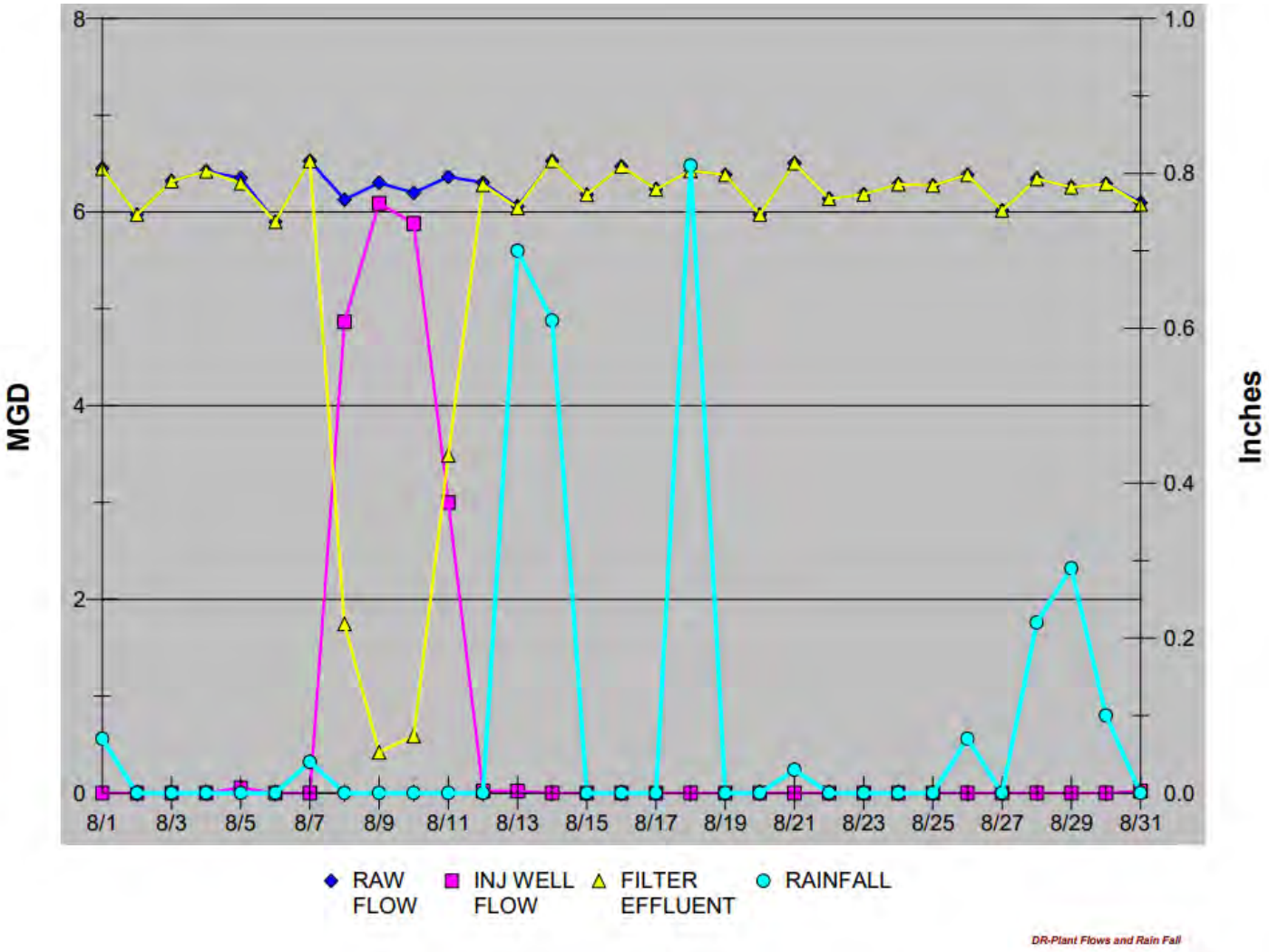


The Peak Hour Flow (PHF) for August was 5,986 GPM which equates to an equivalent daily rate of 8.62 MGD. This is a slight increase when compared to the PHF for July of 5,639 GPM (8.12 MGD).



The Maximum Daily Flow (MDF) in August was 6.53 MGD. This is less than the MDF for July of 6.78 MGD.

For the month of August, 90.29 % or 175.45 MG of the cumulative influent flow to the plant was sent to the IQ storage system where it was distributed, as needed, to the various golf courses and the Abacoa development sites. A total of 19.95 MG of blended effluent was diverted to the Deep Injection Well. The plant delivered a total of approximately 267.15 million gallons of IQ water to the reuse customers during the month of August.



Year to date (i.e., Calendar Year 2022), approximately 83.75% of all influent flow to the plant was treated and available for reuse as IQ water. The total volume of IQ water distributed to reuse customers for the year stands at 1,621.29 million gallons.

All monthly reporting was submitted on time.

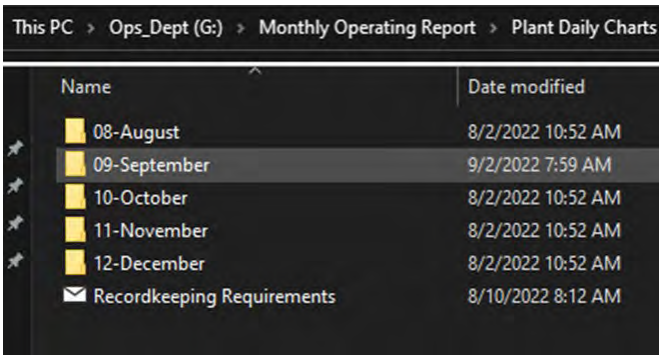
Treatment Plant:

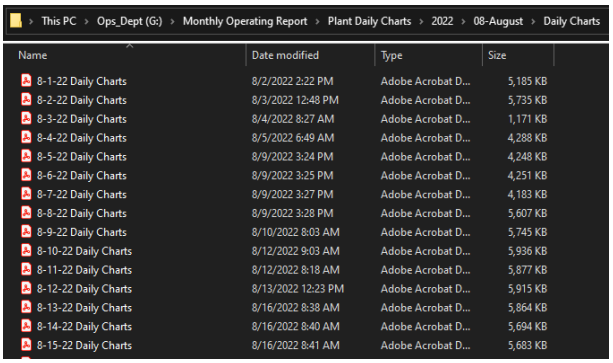
Operations Staff continued to work diligently to perform routine monitoring, sampling and general maintenance of equipment and structures. Staff also completed special projects during the month including working with the Maintenance Team and an outside vendor to evaluate the effectiveness and accuracy of an ultrasonic type, strap-on flow meter on the 30-inch influent force main piping at the headworks structure. Each of the three (3) influent force mains were previously equipped with permanently installed strap-on type flow metering devices but they each reached the end of their useful life and were never replaced. At the time, it was determined that more accurate influent flow readings could be collected using the cumulative total of the two (2) Parshall flumes located upstream of the aeration basins and one (1) weir gate flow sensing device upstream of the equalization tanks. Ultrasonic sensing devices have since become more accurate and reliable in recent years due to technological improvements which are largely due to a better understanding of their use in different types of applications and varying piping configurations. A preliminary comparison of the flow data collected by the temporary flow meter versus the flow data collected using the current flow metering devices suggests a strong correlation and level of accuracy. Staff desires to have continuous flow data for the three (3) influent force mains at the headworks structure and is currently preparing to trial similar flow meter devices from two (2) alternate vendors.

Installation of Temporary Flow Metering Device

Data from Temporary Flow Metering Device – 30-Inch Influent Force Main

During the month of August, Operations Team members worked with the Southeast District office of the Florida Department of Environmental Protection (FDEP) to streamline and modernize the method which we utilize to meet FDEP's record keeping storage requirements. Previously, District Staff were required to manually print out hard copies of all data charts on a monthly basis and store them in a physical binder for a minimum of three years. After multiple discussions and coordination, FDEP outlined a plan which allows the District to store all charts electronically. Storing the charts electronically significantly reduces the level of effort required to ensure compliance and allows Staff to quickly access and view all daily charts. To this end, Staff set up an electronic file structure and format.





File Folder Structure for Monthly Chart Recordation

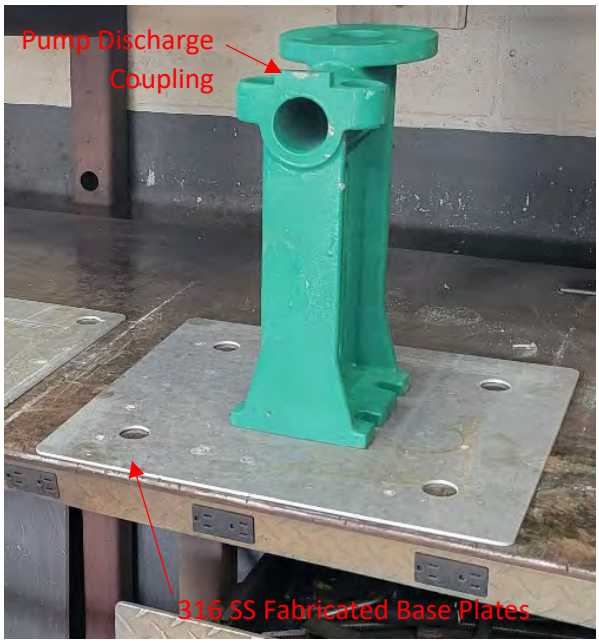
Maintenance Department:

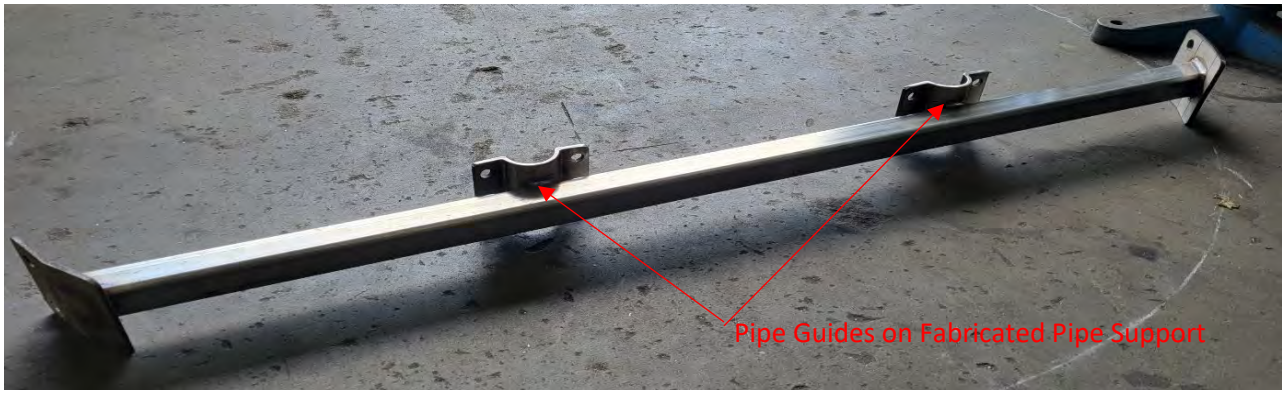
The Maintenance Department continued to efficiently perform planned maintenance (PM) tasks over the last monthly period. In addition to the completion of standard PM tasks, the Maintenance Department addressed non-routine maintenance items as well as "special projects." A few examples of these types of projects are presented below.

The Maintenance Team worked with Operations to perform routine maintenance and repairs to the filter backwash puming units at the deep bed tertiary filtration units. The work was completed during a scheduled shut down of the reclaimed water treatment system to faciliate improvements associated with the IQ-511 Pump Station Piping Improvements project. The maintenance worked required removal of the submerisble type filter backwash pumps from the backwash water storage well using a vendor supplied, truck mounted crane unit. Upon removal of the pumps, Staff performed an annual inspection and fluid change of the two (2) backwash pumps. Staff also replaced the power cables to both of the pumping units.

Filter Backwash Pump Removal and Maintenance

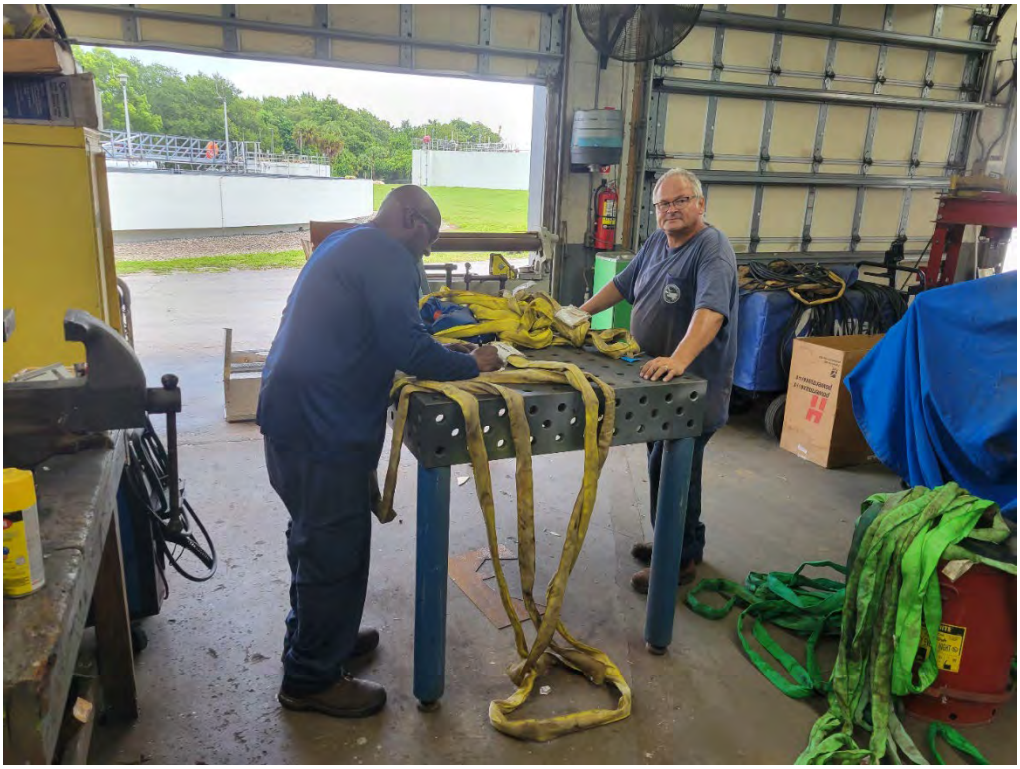
During the month of August, the Maintenance Team provided assistance to the Collections Team during the refurbishment of Lift Station No. 266. As part of the lift station refurbishment, custom fabricated components were requried to resolve existing operational issues at the lift station. The first component fabricated by the Maintenance Team were stainless steel base plates to secure the pump discharge couplings for both of the pumping units. The discharge couplings were secued to the base plates which were then emebeded in concrete at the base of the lift station wet well. A secure attachment of the pumping units is critical to elminate the potential for pump cavitation, wear and premature failure of the pumping units. Due to the depth of the wet well the Maintenance Team also fabircated intermeidary pump discharge piping support stand-offs. Rigidly supporting the pump discharge riser piping using intermediate supports in deeper wet wells mitigates the potential for piping failures.





Maintenance Fabricated Lift Station Components

Lastly, the Maintenance Team worked with the District's Safety Compliance Officer to perform a detailed inspection of all stored lifting/rigging straps to identify signs of excessive wear including but not limited to cuts, frays, chemical burns and knots. Staff also inspected all sling tags to confirm that the type of sling, lifting style and capacity was clear and legible. All non-complying straps were properly disposed of.



Maintenance Team Members Performing Safety Inspection of Lifting Straps

LOXAHATCHEE RIVER DISTRICT
2500 JUPITER PARK DRIVE, JUPITER, FLORIDA 33458 TEL: (561) 747-5700 FAX: (561) 747-9929
D. Albrey Arrington, Ph.D. EXECUTIVE DIRECTOR loxahatcheeriver.org

MEMORANDUM

TO: Albrey Arrington, Ph.D., Executive Director
FROM: Bud Howard, Director of Information Services
DATE: September 7, 2022
SUBJECT: Information Services Monthly Governing Board Update for August 2022

WildPine Ecological Laboratory

Riverkeeper Project

In August, the lab staff and our partners collected water quality samples from 26 monitoring stations throughout the watershed. In addition, a total of 84 fecal indicator bacteria samples were tested in support of additional testing for the weekly bacteria monitoring program, and the additional monthly testing in Jones and Sims Creeks.

The overall water quality score for August 2022 scored "Good" with 80% of all samples meeting the EPA/DEP water quality criteria. This was better than last month's score of 72% and last year's score of 66% for August (see score card below).

Total Nitrogen scored "Good" during August with 88% of sites meeting the water quality criteria, which was slightly lower than last month's score of 93% but better than last year's score of 77%. *Total Phosphorus* scored "Good" with 88% of sites meeting the criteria, which was up from last month's score of 70% and better than last year's 73%. *Chlorophyll*, which has historically poor water quality in the summer months, scored "Fair" with 77% of sites meeting the criteria, which improved considerably from last month's score of 47% and last year's 65%. For the combined *Fecal Indicator Bacteria* (fecal coliforms in all waters, enterococci in marine and brackish waters and *E. coli* in fresh waters), August scores were similar to June and July's "Fair" scores at 76% of the sites meeting the criteria, and better than last year's "Fair" score of 62%.

8/1/2021 8/31/2022

Loxahatchee River District Water Quality Scorecard

Results scored to FDEP/EPA Water Quality Criteria

Green - Good: 80% - 100%
Yellow - Fair: 60% - 79.9%
Red - Poor: < 60%

Monthly Water Quality Score

August 2022

80% Overall

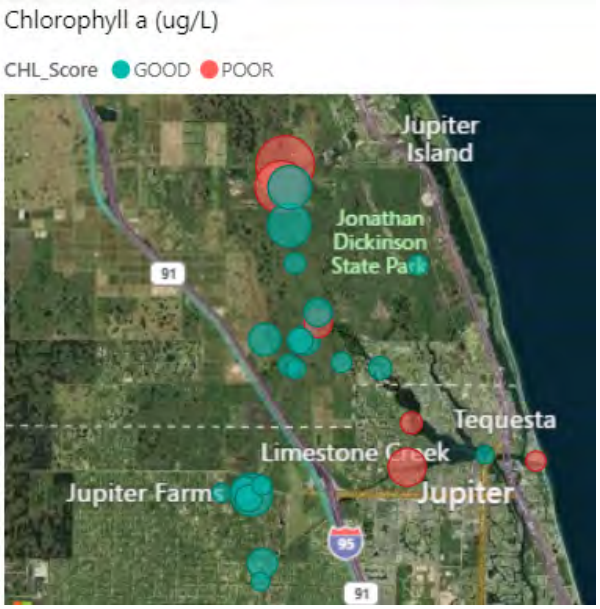
162 Total Samples

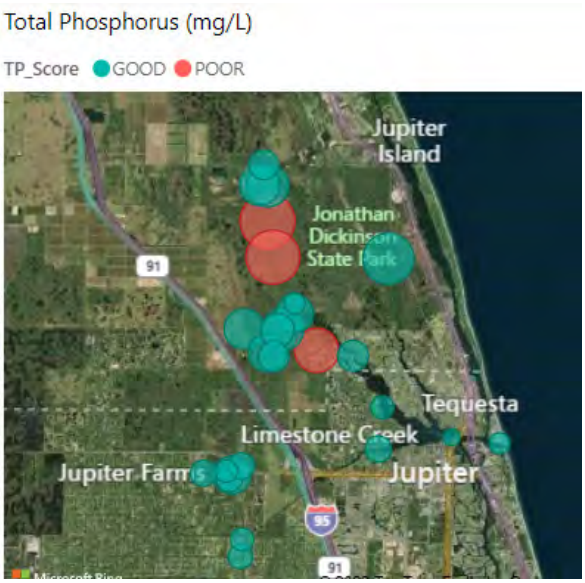
TN: Total Nitrogen, TP: Total Phosphorus, CLA: Chlorophyll a, BAC: Enterococci and E. coli bacteria

Year	Month	# Samples	Overall Score	# TN Samples	Total Nitrogen Percent Good	# TP Samples	Total Phosphorus Percent Good	# CLA Samples	Chlorophyll Percent Good	# BAC Samples	Bacteria Percent Good
2022	August	162	80%	26	88%	26	88%	26	77%	84	76%
2022	July	159	72%	30	93%	30	70%	30	47%	69	75%
2022	June	123	76%	16	88%	16	75%	16	69%	75	75%
2022	May	119	84%	21	95%	20	85%	20	80%	58	81%
2022	April	147	82%	26	96%	27	81%	27	48%	67	91%
2022	March	123	88%	16	100%	16	100%	16	88%	75	83%
2022	February	153	86%	26	88%	26	88%	26	85%	75	84%
2022	January	152	88%	28	100%	28	89%	28	79%	68	85%
2021	December	126	87%	17	100%	17	94%	17	76%	75	84%
2021	November	129	86%	26	92%	26	92%	26	81%	51	82%
2021	October	164	70%	28	100%	28	75%	28	50%	80	64%
2021	September	164	67%	24	96%	24	83%	24	50%	92	60%
2021	August	184	66%	26	77%	26	73%	26	65%	106	62%
Total		**1905**	**79%**	**310**	**93%**	**310**	**84%**	**310**	**67%**	**975**	**76%**

Spatial Distribution of Water Quality Results

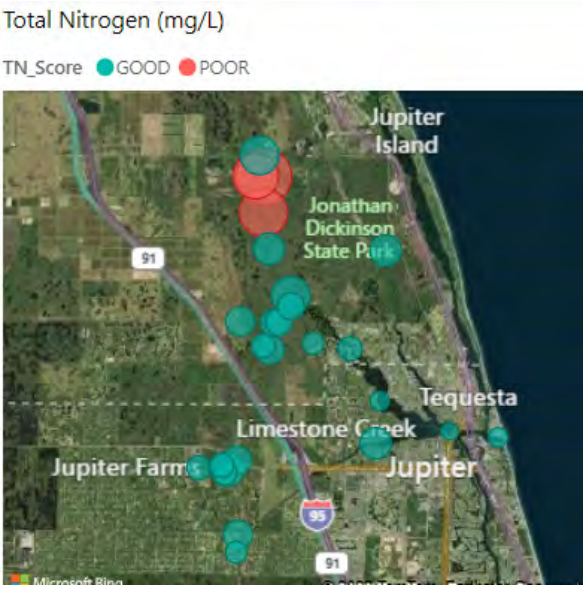
In August, Chlorophyll results met the water quality criteria at 20 out of 26 sites, which was a major improvement from June and July. Two stations in the Kitching Creek tributary (that flows through Jonathan Dickinson State Park) had the highest values. Station 112 and KSE were 29 and 25 µg/L, well above the 20 µg/L numeric nutrient criteria for that area. The other "Poor" scoring stations were scattered throughout the estuary which has stricter quality criteria than the freshwater sites. Station 10, 60, 65, and 72 ranged from 3 to 14 µg/L.



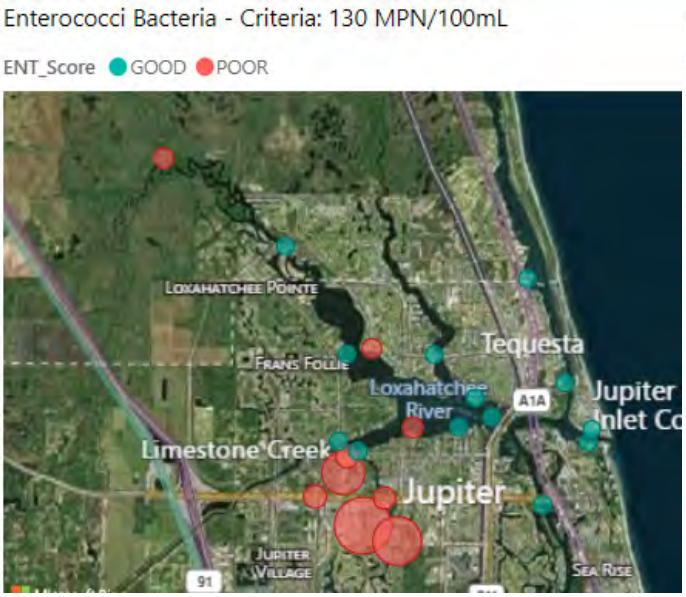


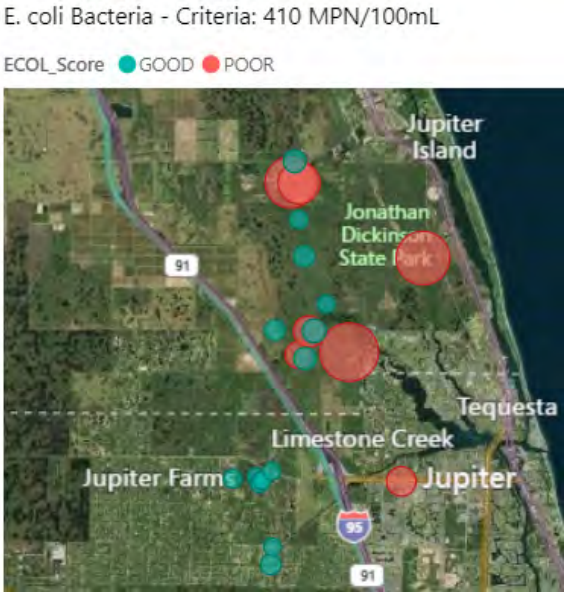
Total Phosphorus results scored “Good” at 23 out of 26 sites in August. Like chlorophyll, the highest concentrations of TP were in Kitching Creek tributary but at different stations. Stations 101 and 108 were just over the numeric nutrient criteria of 0.12 mg/L. The other “Poor” station was River’s Edge (Station 107) at 0.09 mg/L

Total Nitrogen results scored “Good” at 23 out of 26 sites in August. Like chlorophyll and phosphorus, the highest concentrations of TP were in the Kitching Creek tributary. Stations 101, 111 and KSE were over the Numeric Nutrient Criteria of 1.5 mg/L at 1.7, 2.0, and 1.6 mg/L respectively.



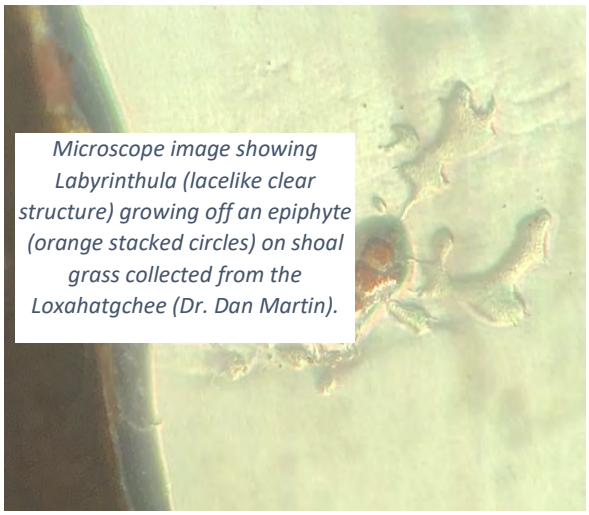
The fecal indicator bacteria results scored “Fair” again for the third month in a row, which is not unusual for this time of year. Bacteria levels in Jones/Sims Creeks dropped from the tens of thousands in July to the thousands in August. For Enterococci (see map below left), the preferred indicator bacteria for salt and brackish waters, two stations in Jones Creek are consistently high. This month, Caloosahatchee culvert (CALC) had the highest enteric count again at 4,611 MPN/100 mL. The Toney Penna Footbridge (TPJ) was second highest at 3,654 MPN/100 mL. Station 735 in Sims Creek at the trailer park was third highest at 2,987 MPN/100 mL. For E. coli, the preferred indicator bacteria for freshwater, seven stations scored “Poor” with four of those being in the thousands. River’s Edge (Station 107) had the highest E. coli count at 2,481 MPN/100 mL. Three sites in Jonathan Dickinson State Park also had high concentrations including North Fork Station 53, and Kitching Creek Stations KSE and 111. E. coli results were 2187, 2046 and 1483 MPN/100 mL respectively and can be seen as large red dots on map below right.





Labyrinthula in the Loxahatchee

Labyrinthula is a genus of protists (predominantly unicellular microscopic organisms that are not an animal, plant, or fungus) found in the marine environment. These protists make up slime molds on blades of seagrass which look like black spots to the naked eye. Specific pathogenic species of Labyrinthula have been known to cause 'seagrass wasting disease' which can devastate seagrass habitats.



Microscope image showing Labyrinthula (lacelike clear structure) growing off an epiphyte (orange stacked circles) on shoal grass collected from the Loxahatgchee (Dr. Dan Martin).

Speaking with colleagues from the University of North Florida that study Labyrinthula, we were all curious to find out if some of the decrease in seagrasses in the Loxahatchee River could be due to this disease.

Under a pilot exploratory project, we collected and shipped samples of seagrass to the University of North Florida for a preliminary diagnosis. Using a 7-day culture and microscopy, Dr. Daniel Martin identified the presence of Labyrinthula protists in seagrasses from the Loxahatchee River Estuary (n=10 blades per species). In a follow up study, Dr. Cliff Ross, used genetic analysis to identify if there were *pathogenic* Labyrinthula species in seagrass tissue samples. It turns out there were no known pathogenic Labyrinthula species detected in any of the turtle grass collected from Sand Bar, North Bay, or Coral Cove (n=13), suggesting non-pathogenic Labyrinthula are present on seagrass in the Loxahatchee. However, occasionally we observe blackened sections or 'lesions' on some turtle grass in the Loxahatchee (figure below). As a follow up to this work, we may consider testing damaged seagrass grass blades to verify/confirm the absence of any pathogenic Labyrinthula.

Image showing seagrass wasting desease in turtle grass. (Dr. Cliff Ross)

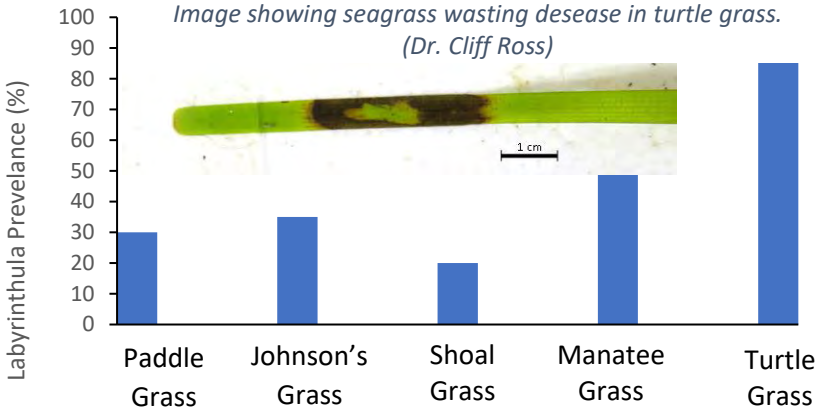
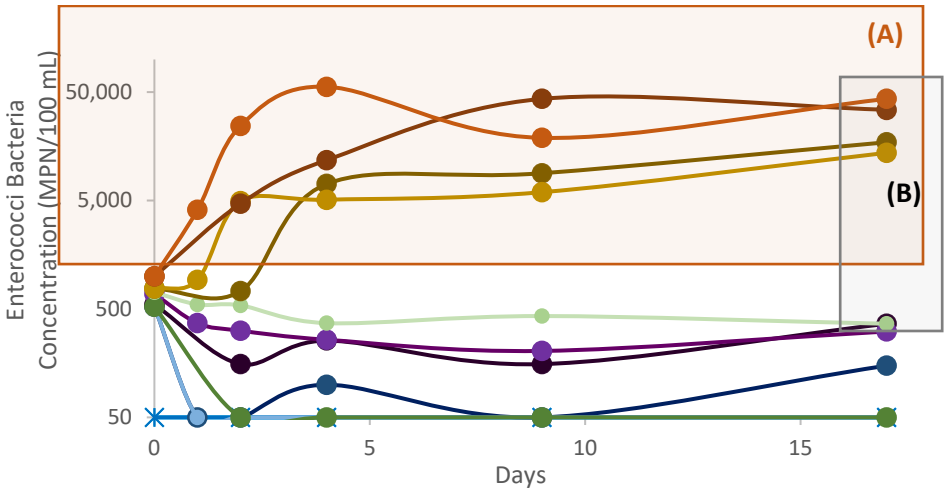


Figure showing prevelance of cultured Labyrinthula from Loxahatchee River seagrass collected August 2021.

Laboratory Microcosm Study

Lab staff have been conducting a series of preliminary studies to evaluate enterococci bacteria persistence under various conditions in outdoor laboratory microcosms (1 liter beaker experiments). The goal is to develop a better understanding of the persistence of enterococci bacteria in local waterbodies, specifically Jones Creek.

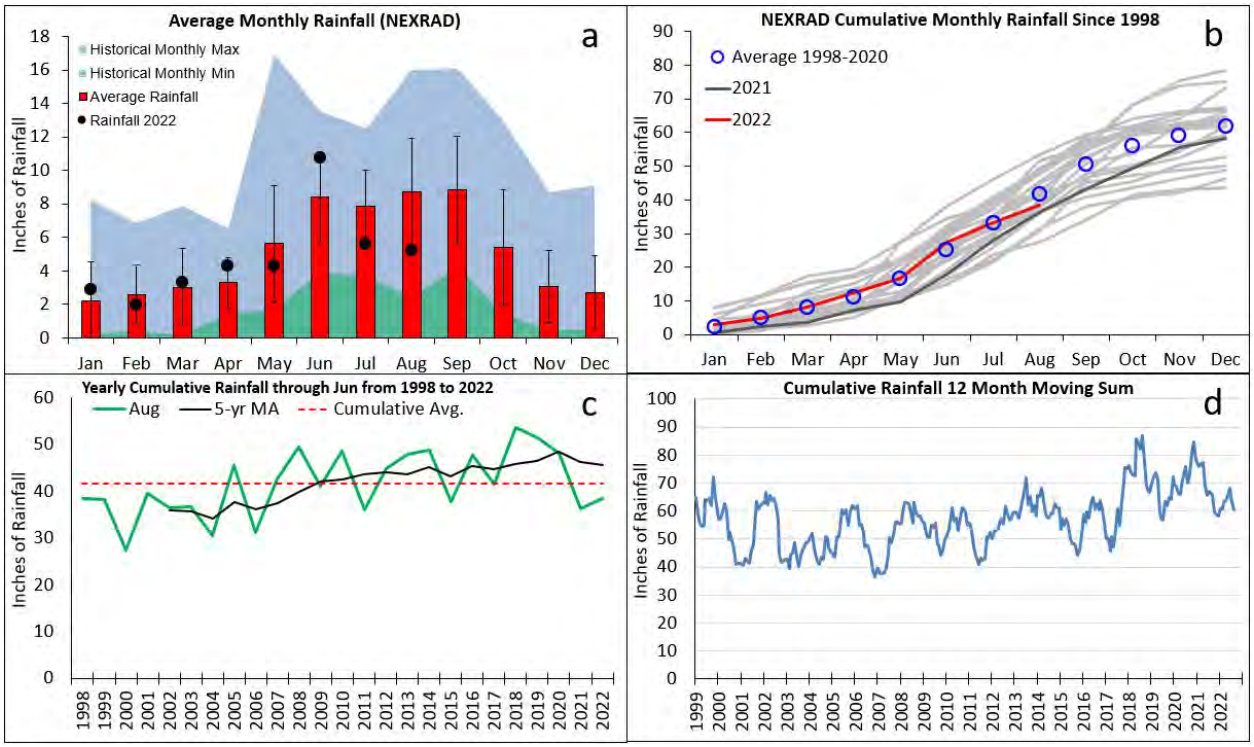
On August 15th, 2022, lab staff collected water from Island Way Bridge (Riverkeeper Station 62) and sediment from Jones Creek. We used the water and sediments to create a variety of concentrations (no sediment, 1 mL, 5mL, 10mL, 100mL, 200mL) distributed into 1 Liter microcosms in duplicate (photo below). Initial results suggest that (A) enterococci bacteria are observed in higher concentrations with higher volumens of sediment (orange box in chart below, 100 to 200 mL samples), and (B) enterococci bacteria were detected in samples containing sediment for up to 17 days, suggesting that the bacteria are thriving in samples with more than 5mL of sediment.



Hydrologic Monitoring

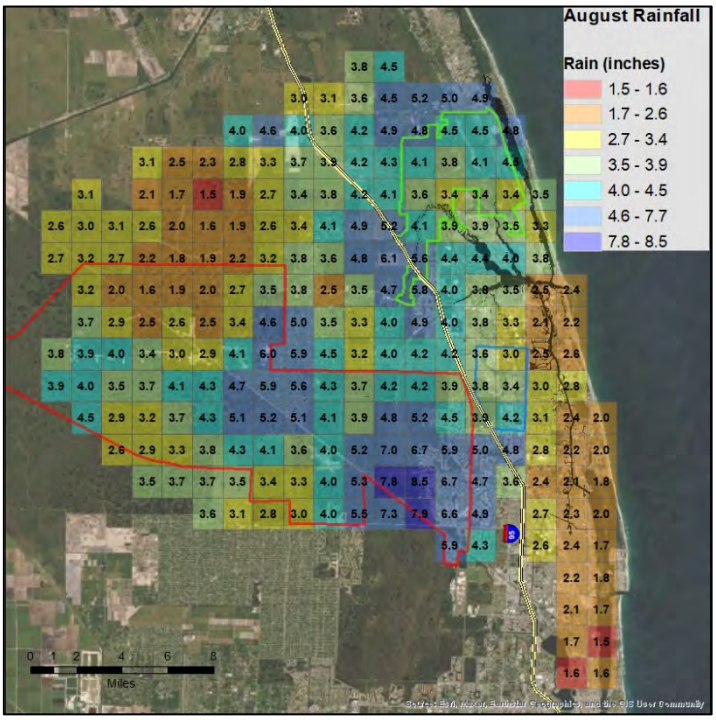
The 2022 wet season is shaping up to be very dry. Rainfall measured across the watershed during August averaged 5.2", which was about 41% below the 8.8" historical average for the month (panel 'a' in figure below) and about 36% below the 8.1" monthly rainfall measured during July 2021. Rainfall was detected within the watershed during 31 days in August, but there were no substantial storms and the highest single-day total was 0.7" recorded on August 18.

August makes two consecutive months with well below average rainfall, which has brought the year to date total for 2022 below historical average. January through August rainfall total is 38.4", which is about 3", or 8% below the historical average of 41.7" (panel 'b' in figure below) due mostly to higher than average rainfall in April and June. Interestingly, this year we are slightly higher than the same period last year, which had only 36.3" through August (panel 'c' in figure below) following below average rainfall in January, March and May of 2021. The rolling 12-month rainfall sum (Sept. 2021 – August 2022) is 60.5", which is below the 66.5" measured during the same 12-month period last year (panel 'd' in figure below).



Figures above display various measures of rainfall. Panel (a) shows average monthly rainfall from 1998 to 2021 (red bars; error bars indicate ± 1 sd). Black dots indicate monthly rainfall for 2022. The blue and green shaded areas show the maximum and minimum rainfall ever recorded for each month. Panel (b) shows monthly cumulative rainfall for each year since 1998. Red line indicates cumulative rainfall during 2022; dark gray line indicates rainfall during 2021. Blue circles are monthly cumulative average rainfall measured between 1998-2021. Panel (c) shows cumulative annual rainfall using NEXRAD radar-based data. Green line indicates cumulative rainfall through indicated month for each year since 1998, when the radar-based rainfall measurements began. Black line is the 5-year moving average across all years and red dashed line shows cumulative average through indicated month. Panel (d) shows cumulative 12-month moving sum of monthly rainfall.

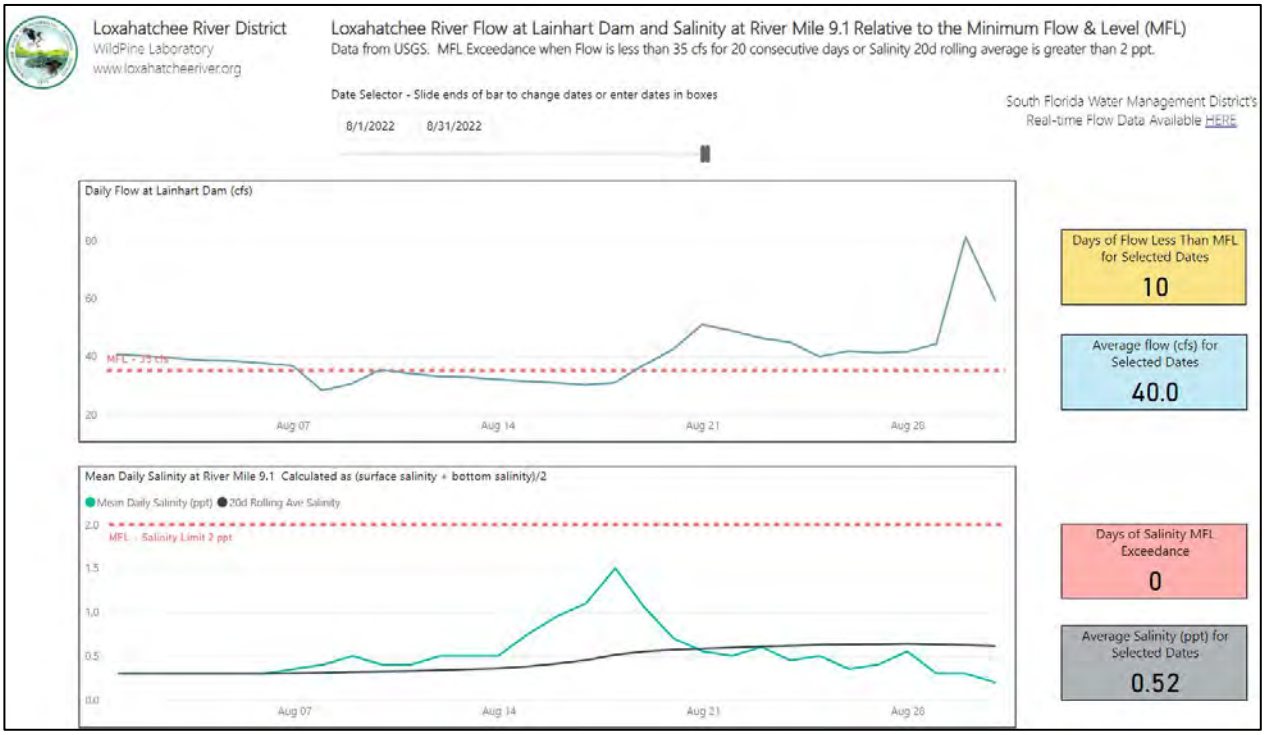
The spatial distribution of rainfall across the watershed ranged from only 1.5” of rain to 8.5” in the south-central portion of the watershed (figure below). Rainfall during August exhibited the typical wet season distribution where the highest amounts of rain were inland (generally west of I-95) and driest along coastal areas. This month, the areas of highest rainfall occurred within the C-18 basin (red outline in figure) which includes Loxahatchee Slough and Pine Glades Natural Area. The region surrounding Jonathan Dickinson State Park also received higher rainfall in August. There were two distinct dry regions during August - the coastal area of Juno to the southeast and the Hungryland Wildlife Conservation Area in the northwest of the watershed.



Rainfall distribution across the watershed using NEXRAD data. Each pixel represents an area of 2 km x 2 km. Blue colored pixels show highest rainfall and red pixels show lowest rainfall. For reference, the red line is the C-18 basin which includes portions of J.W. Corbett WMA, Loxahatchee Slough, and Pine Glades Natural Area; green line shows Jonathan Dickinson State Park boundary, light blue line shows the Abacoa

River flows measured at Lainhart Dam have been remarkably low, averaging only 40 cfs throughout August with peak flow of only 81 cfs measured August 30. Flow decreased through most of the month dipping below the 35 cfs minimum flow target (MFL) on August 8 and remained at, or below, the MFL for the following 10 days until the arrival of some late month rainfall aided with small supplemental flows from the G-160 control structure upstream in the C-18 canal. The rainfall and supplemental flow were sufficient enough to bring flow through the Northwest Fork above the MFL on August 19 where it stayed for the remainder of the month. *These are the second lowest flows for the month of August since 1995 - in 2000 the average flow was 36 cfs.*

Despite dry conditions and low flow, salinity at River Mile 9.1 remained below the 2.0 ppt maximum salinity threshold reaching peak salinity of 1.7 ppt on August 18.



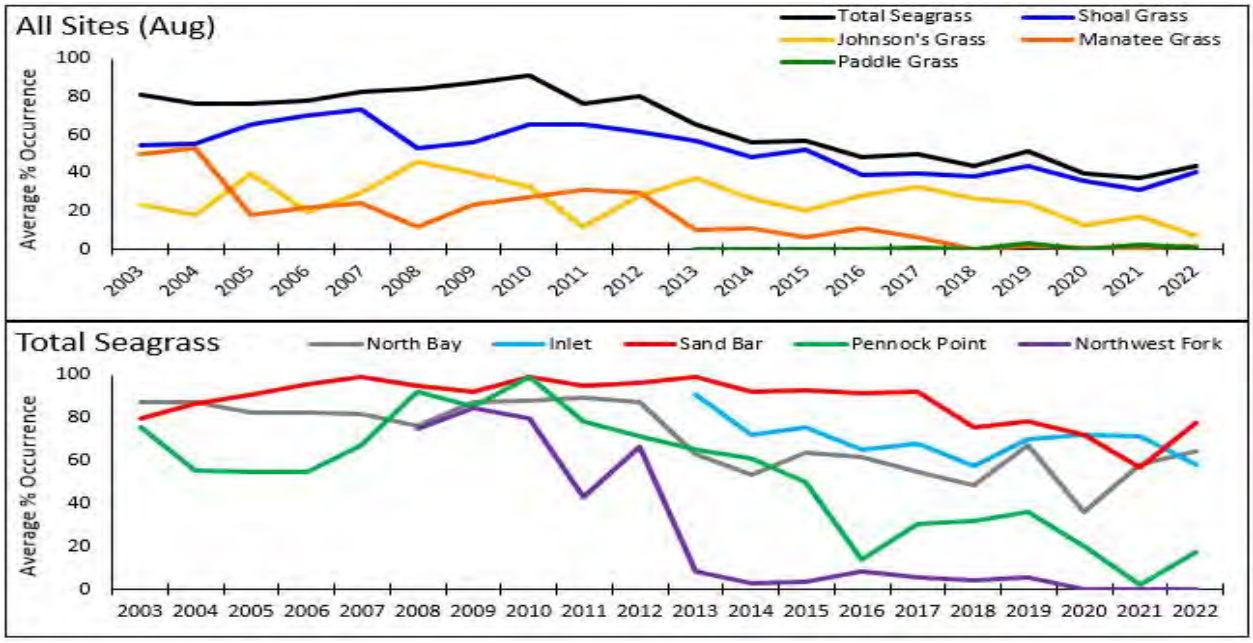
Flow measurements for July 2022 through the Lainhart Dam (top graph) with salinity at River Mile 9.1 (bottom graph).

Seagrass Monitoring

Bimonthly seagrass monitoring for August was completed and, again, showed some encouraging results with overall increases in seagrass coverage across the Loxahatchee River estuary. Seagrass presence showed increase from 38% in August 2021 to 44% in August 2022 and was driven primarily by the increase of Shoal Grass which increased from 32% in August 2021 to 41% in August 2022 (top panel in figure below). Interestingly, the occurrence of Paddle Grass, a species related to and similar in appearance to Johnson's Grass, has been on the rise in recent years. Manatee Grass, which has been nearly absent since 2017, has shown very slight increases in occurrence to about 2% in 2022. Conversely, Johnson's grass experienced a decline from 18% in August 2021 to 7% in 2022.

Seagrass occurrence showed substantial increase at North Bay, Sand Bar and Pennock Point sites compared to August 2021, while the Inlet site showed a decrease from 72% to 58% between 2021 and 2022. The Northwest Fork site again, had the lowest total seagrass presence for August (bottom panel in figure below). A solitary sample point at the Northwest Fork seagrass site had several shoots of Johnson's seagrass, which was the first such siting since June 2018.

The larger landscape-scale seagrass assessment is still in progress and about 78% of the 650 sample points have been completed. So far, the central embayment, the region east of the railroad bridge, the Southwest Fork and much of the Northwest Fork has been completed. The assessment should be finished sometime in September with report expected by year's end. Early observations indicate a general increase of seagrass presence throughout the central embayment and east of the railroad, but still remains largely absent in the Northwest and Southwest Forks, except for the most downstream reaches.



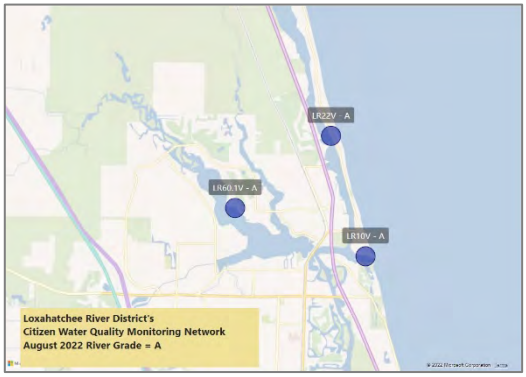
Figures above show average percent occurrence of seagrass by species (top) and by site (bottom) during June of each year beginning in 2003. The North Bay, Sand Bar, and Pennock Point sites include data back to 2003 when monitoring commenced. Northwest Fork (purple) and Inlet (light blue) were added to the monitoring program

Wastewater Surveillance of COVID-19

The wastewater surveillance monitoring for August and early September continues to show that SARS/COVID-19 is still very prominent in our community. With the twice-weekly sampling under the new CDC sampling program illustrates some of the variability inherent in this testing. To aid in the interpretation of trends we have added 12-day rolling average (blue line) to our graphical results to smooth some of the variability we now see in the higher frequency of sampling.

Volunteer Water Quality

The overall Volunteer Water Quality grade for August 2022 scored an “A”. There were lower scores for dissolved oxygen (DO) at the Jupiter Inlet site, with lower (DO) levels observed on the ebb tides. Only one sample was collected at site 60.1 (Tequesta Boat Ramp), which had an elevated pH result and garnered a “Fair” score.



Site	Temp (F)	Secchi	Salinity	pH	DO	DO%	Color	Vis	Salt	pH	DO	DO%	Color	Score	Grade
LR10V	29.9	5.48	35.0	8.2	6.0	96.4	1.0	**A**	**A**	**A**	**C**	**A**	**A**	95.8	**A**
LR22V	28.5	0.50	36.5	8.1	5.0	78.9	1.0	**VAB**	**A**	**A**	**A**	**A**	**A**	100.0	**A**
LR60.1V	30.0	0.90	30.0	8.5	6.0	93.6	1.0	**VAB**	**A**	**C**	**A**	**A**	**A**	90.0	**A**
Average	29.9													94.8	**A**

VAB (Visible at Bottom)
DO (Dissolved Oxygen)
ND (No Data)

Customer Service

Payment Processing

3rd Quarter bills were due August 17, so the Customer Service Team was busy processing nearly 20,000 payments, totalling over $2.7M. A whopping 9,275 (46%) of those payments came through as an automatic payment.

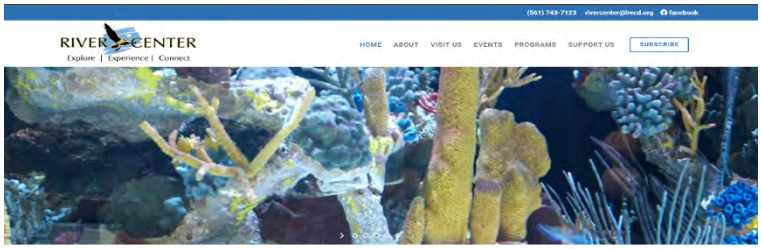
As the new payment systems with Edmund's (our new customer information and billing system) come online, we will roll out an aggressive campaign to get these customers to signup for autopay under the new system. Regrettably, we cannot transfer the payment account information to our new provider.

In-House Check Scanning

Following a lengthy implementation, we now have a fully functional system to scan paper check payments with the payment coupons. Previously staff had to manually enter payment amounts and check numbers. The new system quickly scans the checks and coupons and then, after slew of quality control measures, creates two data files – one that contains the payment information for loading into our customer information and billing system, and the other is a bank deposit data file that contains payment information and scans of the checks. We were able to wrap up the implementation just in time for the mailing of the past due notices that contain a new scan code used by this system. Staff are excited to gain experience with the new system and realize the anticipated efficiency improvements.

Information Technology (IT)

Migration of River Center Website



The IT Team and our web hosting and development provider completed the migration of the River Center's public website to a new platform. With the migration, many backend improvements were made to both the security and performance of the website. Thanks to great work by our consultant, the River Center's website stayed online during most of this migration.

Door Access Control – Treatment Plant

As part of the continuous improvements to site security, the IT Team coordinated the installation of electronic access control for the entrances of the blower building. With the combination of new cameras and expanding access control, we have completed a long list of enhancements across the District.

Loxahatchee River Environmental Center

September 2022

River Center Summary Statistics

LRD'S ENVIRONMENTAL STEWARDSHIP DASHBOARD

		Environmental Stewardship Impact [% ES Impact = (Total Visitors x ES Index)/Monthly Target]	Environmental Stewardship Index	Total Visitors (incl. Visitors, Field Trips, Onsite Programs)	Average Program Participation [Actual participants/Capacity of Program]	Volunteer Engagement	1st Time Visitors	Visitor Satisfaction	Staff Overall Program Assessment	Expenses	Program Revenue
Benchmark / Customer Expectation		% of Target	Monthly Average [Max Rating is 9]	% of Target	% of Capacity	% of Target	% of Target	Rating Average [Max Rating is 5]	Rating Average [Max Rating is 9]	% within budget	% of Target
Blue Level		≥ 110%	≥8	≥ 110%	≥ 95%						
Green Level		≥ 90%	≥7	≥ 90%	≥ 75%	≥ 90%	≥ 90%	≥4	≥7	≥ 85% but ≤ 105%	≥ 90%
Yellow		≥ 75%	≥5	≥ 75%	≥ 50%	≥ 75%	≥ 75%	≥3	≥5	≥ 80%	≥ 75%
Red		<75%	<5	<75%	<50%	<75%	<75%	<3	<5	< 80% or > 105%	<75%
2019 Baseline		134%	7.3	44%	83%	121%	124%	4.7	7.8	97%	128%
2020 Baseline		62%	7.6	28%	50%	70%	65%	4.6	7.8	81%	103%
2021 Baseline		188%	8.1	112%	83%	102%	275%	4.7	7.8	92%	85%
2021	Aug	355%	8.1	160%	85%	175%	330%	4.7	8.0	107%	86%
	Sept	237%	7.6	192%	85%	66%	519%	4.6	7.8	91%	83%
	Oct	63%	7.8	77%	81%	92%	155%	5.0	7.8	104%	90%
	Nov	76%	8.0	75%	87%	112%	156%	4.9	7.9	89%	101%
	Dec	74%	8.1	67%	86%	63%	193%	4.9	7.6	95%	120%
2022	Jan	44%	8.4	65%	73%	65%	236%	4.9	7.6	98%	111%
	Feb	45%	7.8	79%	90%	109%	235%	4.5	8.1	99%	98%
	Mar	82%	8.2	91%	90%	96%	110%	4.7	8.2	103%	103%
	Apr	82%	8.6	104%	75%	136%	173%	4.9	7.9	97%	87%
	May	45%	8.1	55%	86%	55%	147%	5.0	7.9	100%	153%
	June	139%	8.4	86%	92%	105%	107%	4.8	8.0	100%	122%
	July	152%	8.3	95%	84%	134%	164%	4.5	7.9	101%	123%
	Aug	111%	8.3	88%	100%	147%	184%	3.8	8.0	91%	129%
Consecutive Months at Green		3	13	0	4	3	13	13	13	12	4
Metric Owner		O'Neill	O'Neill	O'Neill	Duggan/Warwick	Weeks	O'Neill	O'Neill	O'Neill	O'Neill	O'Neill

Metric	Explanation
Total Visitors	This is a short month for us. The first week in August is the only full week that we had with summer visitors. We were also closed for a week for maintenance. In addition, when the students go back to school, we see another decrease with regular visitors. No significant programs (after summer ended) either. We had 1,019 visitors total in August compared to our target of 1,156.
Visitor Satisfaction	We had three entries as a "1" satisfaction level that I believe were mistakes. The rest of their scores (Explore, Experience, Connect) were all "9" meaning that they made good connections in the program.

River Center General

New Employee

We welcomed Jess Redman to our team as our Environmental Educator I. She has a BS in Political Science and then an MS in Counseling Psychology. She has also published four children's books with Macmillan and visited many schools and libraries to talk to kids about reading and writing. She actually started coming to the River Center when her children were small and has attended many story times, campfires, and family programs. We are looking forward to working with her on our field trips and family programs.

Eagle Scout Project

In August, Eagle Scout candidate, Joey Bates, spruced up our north garden by moving the bench and creating a path that lined up with the bird bath focal point. The path also now gives visitors an invitation to step in closer to the plants in that area to better observe them.

Special Programs

Jr. Angler Tournament 2022

Returning for its ninth year, our Jr. Angler Fishing tournament was a great success this summer. We had 65 registered anglers participate this summer for our 5-week competition. The young anglers were hooked, and the competition exceeded our expectations again this year. We are thrilled to report that the tournament more than achieved its goal of helping contestants to explore the diversity of local fisheries and learn more about the area's unique aquatic habitats, all while honing their fishing skills.

The tournament lasted five weeks and participants reeled in over 6,630 fish and 134 different species! In hopes of accommodating all interested participants, both fresh and saltwater photo submissions were accepted. The excitement of the tournament culminated in the fish fry and award ceremony on August 5th, where the winners were announced. A hearty congratulation goes out to the grand prize winner, Jr. Angler Zac Zimmermann who managed to reel in and photograph more than 570 fish and caught 53 different species!

After collaborative efforts from our ever-growing list of sponsors and partners, we are proud to announce that the completion of our ninth Jr. Angler Tournament was just as successful as the first. With such tremendous turnout and interest in the tournament, the River

Center hopes to continue building on this accomplishment. We are already looking forward to next year's competitive and educational summer adventure. A huge thank you to our sponsors: Fishing Headquarters, West Palm Beach Fishing Club, and Marine Industries Association of Palm Beach County.

Family Estuary Exploration [Saturday, August 6th]

On Saturday, August 6th the River Center hosted a Family Estuary Exploration at Blowing Rocks Preserve. This activity includes 2 hours of seine and dip netting in our beautiful Indian River Lagoon. Guests discovered plenty of sea urchins, Florida Fighting Conchs, Queen Conchs, and sea sponges! We had fun exploring the preserve and splashing around outdoors. We had 14 participants total for the programs. The River Center would like to thank The Nature Conservancy for their continued support through this partnership.

Blooming in the Garden: Hoppy Little Frogs [Saturday, August 13th]

On Saturday, August 13th the River Center conducted our Blooming in the Garden program, designed for children ages 3-6. The theme for this month was “Hoppy Little Frogs” which included a fun story, featuring frogs and a garden themed craft. We then moved to our garden for a frog hunt and learned why these amphibians are so beneficial for our environment. When it was time to go home, children received seeds to take home to start their own garden!

Kayak Tour to Loxahatchee Slough Natural Area [Friday, August 4th]

On Friday, August 4th the River Center lead a tour group of 13 participants around the Loxahatchee Slough Natural Area with 2 staff members. The Loxahatchee Slough Natural Area is Palm Beach County's largest and most biologically diverse natural area. Nine native Florida ecosystems are preserved at this 12,957-acre site: mesic flatwoods, wet flatwoods, mesic hammock, hydric hammock, wet prairie, depression marsh, slough marsh, strand swamp, and dome swamp. Participants were lead down the Cypress Run trail where they witnessed wildlife such as roseate spoonbills, alligators, river turtles, Florida gar, and other fishes.

Volunteer of the Month

Jaden Gunn is our August 2022 Volunteer of the Month! Jaden spent every single Saturday in the month of August at the River Center and always brings his enthusiasm for the environment to his volunteering shift. Jaden recently joined our volunteering team in July and has been very dedicated since. He is polite, engaging, and knowledgeable. He is very active around the center and greets every guest with a warm smile. We appreciate Jaden and everything he does for us while volunteering!

Upcoming River Center Events

RSVP at www.lrdrivercenter.org/events-calendar
rivercenter@lrecd.org or 561-743-7123

Every Thursday, 9:30 a.m. – 10 a.m. – Story time: Join the River Center for Story Time. Families are welcome as we read stories and have an animal encounter.

September 17, 8:00 a.m. – 4:00 p.m.: Safe Boating Class: The River Center continues to collaborate with the US Coast Guard Auxiliary "Flotilla 52" to provide a series of Boating Safely Classes targeted specifically to young boaters in our community. These classes are provided through a generous sponsorship by the AustinBlu Foundation, a not-for-profit dedicated to raising awareness and promoting educational programs to improve boater safety. There is no cost for this class, however there is a deposit required to reserve a seat. The deposit of $10 will be refunded in full to all students who complete the class. Recommended for children 12 years and up, but all ages are welcome.

October 1: 1 p.m. – 2 p.m.: Science with Sam: NEW TIME! On select Saturdays from 1:00 pm – 2:00 pm, join our Scientist Sam for different science activities for our K-5th grade aged children. Activities will include garden exploration and hands-on opportunities with wildlife. Each month has a different theme!

October 8, 6 – 9 pm: Campfire for Girls: You do not have to be a Girl Scout to participate in this event. If your girl is interested in becoming a Girl Scout, you can learn more about scouting at this event. Register your girl to be a new Girl Scout and she can earn her first badge and special patch all in the same night! Girls will receive a special patch for registering to be new Girl Scouts. Girls will earn their Girl Scout Way Badge at this event. Girls will enjoy Girl Scout traditions, sing songs, make s'mores, and celebrate sisterhood. This Girl Scout celebration will honor women and girls who change the world. Girl Scout Traditions are still an important part of scouting more than 100 years later! This campfire is recommended for girls in grades Kindergarten – 12th grade. ALL GIRLS AND GIRL SCOUT LEVELS WELCOME! While this campfire is for the enjoyment for all girls, we are looking for Cadettes, Seniors, and Ambassadors to help run different activities for the younger girls. If your troop is interested, please contact: education@lrecd.org

October 14, 6 – 9 pm: Stranger Things Halloween Campfire: You're invited to discover "Stranger Things" of the Loxahatchee with us at our Halloween Campfire! Costumes are encouraged and welcome! Activities include Games, Crafts, Scientific Equipment, Campfire, S'mores, Trick or Treating, Creepy Crawlies, Family Fun, and Hayrides.

October 22, 8:00 a.m. – 4:00 p.m.: Safe Boating Class: The River Center continues to collaborate with the US Coast Guard Auxiliary "Flotilla 52" to provide a series of Boating Safely Classes targeted specifically to young boaters in our community. These classes are provided through a generous sponsorship by the AustinBlu Foundation, a not-for-profit dedicated to raising awareness and promoting educational programs to improve boater safety. There is no cost for this class, however there is a deposit required to reserve a seat. The deposit of $10 will be refunded in full to all students who complete the class. Recommended for children 12 years and up, but all ages are welcome.

October 26, 10:00 a.m. – 12:00 p.m.: Kayak Tour (TBD)

October 29, 10 – 11:30 a.m.: Blooming in the Garden: Join the River Center for our Blooming in the Garden program, designed for children ages 3-6. The program will start at 10:00am at the River Center Fire Pit with a story time and a garden themed craft. We will then move to our garden for a garden themed hands-on activity. When it is time to go home, children will receive seeds to take home to start their own garden! So do not miss this exciting opportunity for your little ones to enjoy nature!

LOXAHATCHEE RIVER DISTRICT
2500 JUPITER PARK DRIVE, JUPITER, FLORIDA 33458 TEL: (561) 747-5700 FAX: (561) 747-9929

D. Albrey Arrington, Ph.D. EXECUTIVE DIRECTOR loxahatcheeriver.org

MEMORANDUM

To: D. Albrey Arrington, Ph.D., Executive Director
From: Ed Horchar Safety Officer
Date: September 7, 2022
Subject: District Safety Report for August 2022

Safety Metrics: July 2022
OSHA recordable injuries: Zero
Lost time injuries: Zero
Actual TRIR: 1.3 [Goal < 2.2]
TRIR = Total Recordable Incident Rate

Safety is a Core Value at LRD – *Our conduct is shaped by a personal commitment to protect the health and safety of ourselves and our colleagues. Safety is driven through education, training, planning, protective equipment, and individual accountability.*

OSHA Recordable Incidents/MVA's:

The LRD has now experienced zero OSHA Recordable Injuries for nine consecutive months. With one recordable injury in the last 12 months, we have sustained a Total Recordable Incident Rate (TRIR) of 1.3, below our goal of 2.2 and a rate shared as the lowest in recent history. This District has now surpassed the best performance (recent history) for consecutive months with no recordable injuries. The District will need to work injury free for an additional three months to reach a rate of zero.

The District did not experience a Motor Vehicle Accident (MVA) in August. With a total of three MVAs in the last 12-month period, the MVA incident rate is at 3.4. Above the LRD MVA goal of 2.2. The District will need to work MVA free for an additional three months to reduce the MVA incident rate.

Sustainment:

Job Hazard Assessment (JHA) activity volume rebounded in August. The District has established another record high with 797 JHA's completed compared to the previous high of 740 completed in June. The following is a comparison of August JHA's performed per employee in each participating department:

Reuse:	43 JHA / employee	Construction:	13 JHA / employee
Operations:	28 JHA / employee	Inspection:	7 JHA / employee
Collections:	17 JHA / employee	Wild Pine Lab	2 JHA / employee
Maintenance:	16 JHA / employee		

We saw improvement throughout the District in August. Each Department either increased or sustained their volume compared to July. Operations continues to perform at a high level. Reuse, however, gets the shout-out for August as volume increased by 16 JHA's per employee. Inspection and Construction also upped their game with increased activity by 6 and by 5 JHA's per employee, respectively. August's JHA performance demonstrates a commitment the District employees have made to work in a safe environment. I am confident we can sustain this attitude. It makes reaching the zero-incident rate we are steadily approaching that much more achievable.

There where zero Near Miss reports initiated in August. Although we had no recordable injuries in August, we know we are not perfect and near miss occurrences do present themselves periodically. Let me remind everyone again. Reporting safety issues in the Near Miss Reporting system can also include Unsafe or Unhealthy Conditions, Environmental Pollution Potential, and Suggestions for Safety Process Improvement. This is a continuous improvement process that will improve you or your co-worker's safety. Your input is important, and each employee is encouraged to participate in this program.

Training:

The emphasis on classroom and computer-based safety training continues. Two new hires completed mandatory regulatory, and policy driven safety training. The District realized a 96% completion rate for all safety training tracked in August, above the District goal of 95%. The focus in August was Hazard Communication and Personal Protective Equipment, with additional training provided as required. Employees can expect at least one training module deployed every month. Be aware of initial training notifications from "platform@targetsolutions", and complete the training on time. If employees are overdue, a computer-based training reminder will be sent through target solutions.

Additional training in August included the final 2022 CPR/AED and First Aid training (including Bloodborne Pathogen) which was conducted on August 10th in the Operation Education Training Room. This was the final 2022 offering of this training. In 2022 a total of 43 District employees took advantage of this training which included Adult, Infant & Child CPR/AED and First Aid.

Fork Truck certification and recertification was conducted on August 17th and 18th by a Safety Consultant provided by the Safety Council of Palm Beach County. Thirty-three District employees participated in this training that was conducted on site. This included recently hired employees required to operate fork trucks and existing employees whose certifications are about to expire. Make up training will be provided in house as required.

Utility truck crane operator training was conducted on August 23rd by a subject matter expert from Advanced Overhead Systems, Inc. for sixteen District employees who operates the utility truck crane, especially recently hired employees. The intent is for operators to understand proper daily inspections on wire rope and system components as well as safe operating practices. An additional class will be offered at a later date for those who were unable to attend.

The annual fixed overhead hoist inspections were conducted on August 24th.

Pictured at left: Alex Smith is is directing Tommy Cox as he offloads fill dirt at a recently installed cleanout. At right: Tommy Cox, operates a compactor utilizing hearing protection, gloves, and safety boots.

A total of 12 Workplace inspections occurred in August. District jobs that were observed included cleanout installation, Deep Bed Filter wall pressure cleaning, sump pump repair at the Master Lift Station flow meter pit, LS 266 rehabilitation at the Bear Club, chlorine cylinder remove and replacement, cleaning a line for a new home's Certification of Occupancy at Pinnock Point Road, LS 14-point repair, and Deep Bed Filter pump removal.

Pictured at left: Chuck Talledo enters the Master Lift Station flow meter pit. At right: Joe Brown, Kyle Shepherd and Rod Jessurun support the work Chuck is preforming.

Pictured at left: Jason Broadrick enters LS 266 while Confined Space Writer John Voss (Construction Manager) supervises the entry and Attendant Ryan Chernekoff monitors activity. At Rt: Robbie Spires along with Ryan and John, support the rehab effort Jason is performing in the pit.

As a reminder the peak of the hurricane season is September 10th. As Albrey Arrington pointed out in his message on August 29th, there is a lot of activity taking place in the tropics. So, stock up on your storm supplies and get prepared if you haven't done so.

District employees continue to benefit from a safe work environment as evident by the successful confined space entries above, and nine consecutive months of injury-free work. The JHA and training programs are benefiting District employees as we get closer to 12 months of injury free work. Stay safe at home and at work. My door is always open. Visit with any questions or ideas you may have. Let's help each other achieve our safety goals.

LOXAHATCHEE RIVER DISTRICT
2500 JUPITER PARK DRIVE, JUPITER, FLORIDA 33458 TEL: (561) 747-5700 FAX: (561) 747-9929
D. Albrey Arrington, Ph.D. EXECUTIVE DIRECTOR loxahatcheeriver.org

MEMORANDUM

TO: Governing Board
FROM: Administration Staff
DATE: September 15, 2022
SUBJECT: Consultant Payments

The following amounts have been reviewed and approved for payment to our consultants for work performed during the prior month.

Consultant	Prior Month	Fiscal YTD
Shenkman	$ 19,995.00	$ 99,655.00
Baxter & Woodman	$ 7,221.17	$ 81,257.53
Carollo	_	$ 113,701.16
Chen Moore	_	$ 116,640.83
Holtz	$ 38,732.12	$ 304,250.60
KCI	_	$ 92,415.60
Mock, Roos & Associates	$ 10,790.50	$ 89,281.75

Should you have any questions regarding these items, please contact Kara Fraraccio concerning the attorney's invoice, and Kris Dean concerning the engineers' invoices.

Future Business

General:

- Board Presentation of select Six Sigma green belt projects
- Renewal of Health Insurance

Future Contracts:

- Construction contract for BLM Site Plan and House Renovations
- Biosolids Process Evaluation – Professional Engineering Services Contract
- Greenhouse Gas Initiatives - Professional Engineering Services Contract
- Lift Station Control Panel Replacements –Engineering Contract
- County Line Road Bridge Utility Relocation – Professional Engineering Services Contract
- County Line Road Bridge Utility Relocation – Joint Project Interlocal Agreement with Village of Tequesta
- Science Center at JILONA – Construction Contract
- 20-007-WWRECGENCONSTR – Wastewater and Reclaimed Water General Construction Services – Contract Extension
- FY23 Lateral Lining – Piggyback Contract
- FY23 Main Lining _ Piggyback Contract
- FY23 Vehicle Purchases – FSA Cooperative Purchasing Program