



St. Johns River Water Management District

Michael A. Register, P.E., Executive Director

525 Community College Parkway S.E. • Palm Bay, FL 32909 • 321-984-4940 • www.sjrwmd.com

DATE: April 6, 2020
TO: Prospective Respondents
FROM: Amy Lucey, Procurement Specialist

SUBJECT: Addendum #3 to Quote Request, # 37728, Install new 60-inch Aluminum Flap Gate on S-259 Discharge Pipe

As a result of inquiries, the following clarifications/changes are provided for your information. Please make all appropriate changes to your bid documents. Note: changes are reflected with original language shown with strike-through and new language is underlined.

- Q1: According to our vendor, "[They don't] fabricate any kind of a sleeve mounting for any of their gates. There are a lot of things that can go wrong with a sleeve, and it just isn't a stable type of mount for a flap gate that is as large as this one is. A gate this size would typically be mounted on a concrete wall. The sleeve mounting is typically seen on agricultural applications with much smaller gates". **Should we consider using a concrete wall instead of a sleeve?**
- A1: **No, a concrete wall is not necessary, we are comfortable that the sleeve can be anchored/bolted/screwed into the existing HDPE liner. We understand that this is not a standard sleeve and may need to be fabricated.**
- Q2: The size of the gate for this application leads to the next concern, which is the material of construction. Our vendor could recommend stainless steel, as approved in **Addendum #2**. However, they believe for an application of this type, the majority of flap gates would be either **Cast Iron** or **Cast Ni-Resist**. If the application is true freshwater, it would be **Cast Iron**. If the application is brackish water, or a stormwater treatment area (agricultural runoff, street runoff, polluted) or some kind of combination, it would be **Ni-Resist**. **Should we consider Cast Iron as another substitute material?**
- A2: **No, we are comfortable with an aluminum flap gate in this environment.**
- Q3: We have been notified that the pipe is damaged (I believe at the end where the gate would be installed), but there hasn't been anything provided to see and/or know exactly what the damage is and how extensive the damage is. **Are there any addition details on the existing damage & what must be done to repair it OR replace a section of the pipe?**
- A3: Attached is the latest inspection report for this structure. Any reference to the end of the pipe being damaged is in reference to the outer CMP. The specified sleeve extends into the pipe 54-inches and extends beyond the HDPE 6-inches. The flanged flapgate will not be in conflict with the CMP. If this condition is found to be different during installation, the District will address at that time.

Attachment:
S-259 Inspection Report 2-12-20

NOTE: The Quote Due Date **remains** 2:00 p.m., **Thursday, April 21, 2022**

Please acknowledge receipt of this Addendum on the Quote FORM provided in the proposal package.

If you have any questions, please e-mail me at alucey@sjrwmd.com.

STRUCTURE S-259
INSPECTION DATE: 2/12/2020



Double Barrel, 54" Diameter x 205' Long

Location:	USJRB South
	Levee L-75
Latitude:	27.7770 N
Longitude:	80.7083 W
Type:	Gated Culvert & Flap
No. Barrels:	Two
Inspection	
Start Date:	2/12/2020
End Date:	2/12/2020

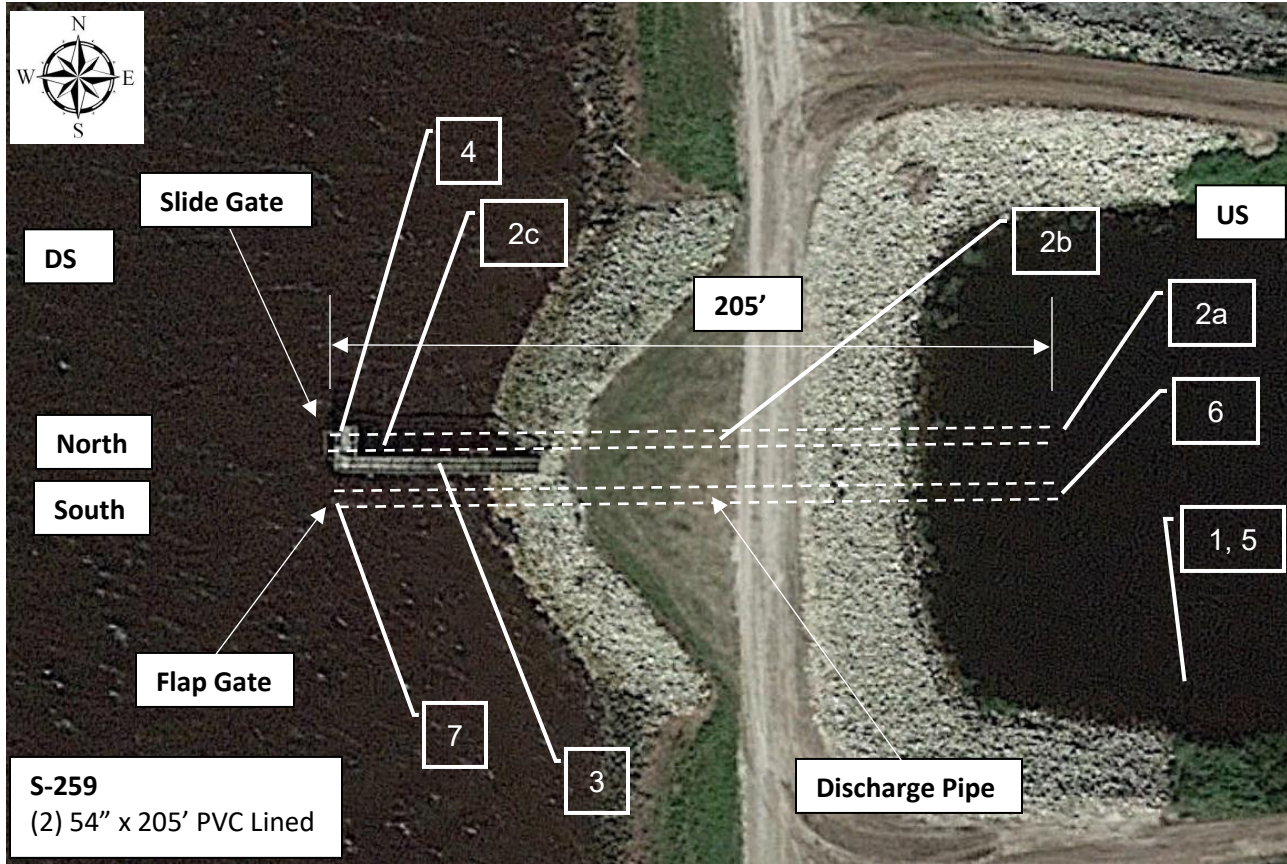
TEAM MEMBERS	
Lead Engineer	Jeffrey O'Connor, P.E.
Dive Supervisor	Jeremiah Duncan
Diver	Andre Lorenzo
Diver – Standby	Natasha Daniel
Dive Tender	Dillon Sims
Dive Tender	
Animal Control	TJ McDonagh
SJRWMD Agent	

Respectfully Submitted,
UNDERWATER ENGINEERING SERVICES, INC.
3306 Enterprise Road
Fort Pierce, FL 34982
(772) 337-3116 Lic. No. CA3703
Jeffrey O'Connor, P.E. (FL 50914)
Vice President
Project Manager



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Aerial View of Structure



No.	Item No.	Inspection Item	Rating	Deficiency
1	DS1000	Additional Items	C-3	The upstream staff gauge has missing numbers and corrosion.
2	US115	Culverts	C-2	(a)Suspended U/S ends; (a) PVC debris; (b) field joint; (c) protruding screws
3	DS114	Structural Support and Bracing	C-2	Loose hardware and minor corrosion
4	DS151	Structure Gates	C-2	Slide gate has minor to moderate corrosion.
5	DS1000	Additional Items	C-2	The upstream gauge has corrosion on gauge plate edges and minor checking on timber.
6	PS200	Discharge Pipe	C-2	The upstream end is suspended 6" to 8" for 10'
7	PS206	Backflow Gates	C-2	Minor to moderate corrosion on flap gate and downstream frame.

Structure Description and Method of Underwater Inspection

Structure S-259 is a structure with a gated culvert on the north and a discharge pipe and flap gate on the south. Both barrels extend east (upstream end) to west (downstream end with gates) under Levee L-75. The barrels are PVC-Lined, 54 inches diameter by 204' feet long (south) and 207' long (north). The west end has an access pier comprised of timber piles and a timber superstructure. The north barrel has a slide gate at the downstream west end. The south barrel has a flap gate at the downstream west end with an aluminum column assumed to support a cable to open the flap gate.

The underwater inspection was performed by a 5-person dive team on February 12, 2020. The dive team worked from a dive trailer, using surface-supplied air, and accessed the structure areas from the bank.

The scope of services included the underwater inspection of the submerged structure components. The area extended 20 feet beyond the structure edges. There were no boat barriers.

The air temperature was 82 degrees F. and the weather was mostly clear. The underwater visibility ranged from 1' to 2'. The downstream water level was 20.9 Ft per the D/S staff gauge. There was no upstream staff gauge.

Rating System

- C-1: No action needed
- C-2: Monitor condition at next dive inspection (5 years)
- C-3: Schedule repair/replacement (for routine items)
- C-4: Schedule repair/replacement (for safety or operational items)
- C-5: Repair/replace immediately (for structural items)
- C-6: Critical - Repair/replace immediately (for operational items)

Summary of Observations

Items Rated C-5 and Above

There were no items rated C-5 and above.

Items Rated C-4

There were no items rated C-4.

Items Rated C-3

- Item DS1000: The upstream staff gauge elevation numbers from 17 and 20 to 22 are missing.
 - Recommended Action: Replace the upstream staff gauge numbering from 22 to 17 as necessary.

Items Rated C-2

- Item US115: (1) The east end of the north barrel is suspended 6" to 8" above the channel bottom for approximately 10'. The bottom does not appear to have scoured. (2) There are several 3" diameter PVC

pipes on the upstream side, away from the end. (3) There is a field joint at 115' in from the upstream end in the north barrel. The joint has a 1" gap x 1" penetration nearly all around. There is hard back in the joint. (4) The north barrel has screws protruding up to 1" into the interior of the barrel all around at 196' in from the upstream end.

- Recommended Action: (1) Monitor the suspended upstream end of the north barrel for additional suspended length or damage. (2) Monitor the PVC pipes for interference with the flow. (3) Monitor the field joint at 115' of the north barrel for movement or damage. (4) Monitor the screws in the north barrel for damage or debris catching on them.
- Item DS114: (1) The access bridge has diagonal braces above water from the pile to the cross beams: (a) The 1st pile (from east end) has one loose washer on the hardware; (b) the 4th and 6th piles each have one bolt that spins; (2) The 3rd through 6th piles have diagonal braces extending into the ground toward the north and south. (a) The south channel of the 3rd pile has minor gouges on the flange edges of 2" long x 1/4" deep; (b) The 5th pile has minor corrosion on the channel bolts. (3) The timber piles have minor checking.
 - Recommended Action: Monitor the pier brace hardware for advanced corrosion or other damage. Monitor the piles for advanced checking or decay.
- Item DS151: The west side of the north gate has minor pitting on the edge of the top stiffener. The gate has one 4" diameter area on the east face north side with 1/8" pitting, not observed elsewhere.
 - Recommended Action: Monitor the metal for further advanced pitting.
- Item DS1000: The gauge plate has minor corrosion on the edges. The timber board has minor checking and wear.
 - Recommended Action: Monitor the gauge plate for advanced corrosion and the timber board for advanced decay.
- Item PS200: The east end of the south barrel is suspended 6" to 8" above the channel bottom for approximately 10'. The bottom does not appear to have scoured.
 - Recommended Action: Monitor the suspended upstream (east) end of the south barrel for additional suspended length or damage.
- Item PS206: The east (upstream) face of the flap gate on the south barrel has minor corrosion on the hardware. The west (downstream) frame for the flap gate and the extended column for the lifting cable have minor to moderate pitting of 1/16" deep and occasional 1/8" deep covering 70% of the area.
 - Recommended Action: Monitor the corrosion on the south barrel flap gate and supporting frame.

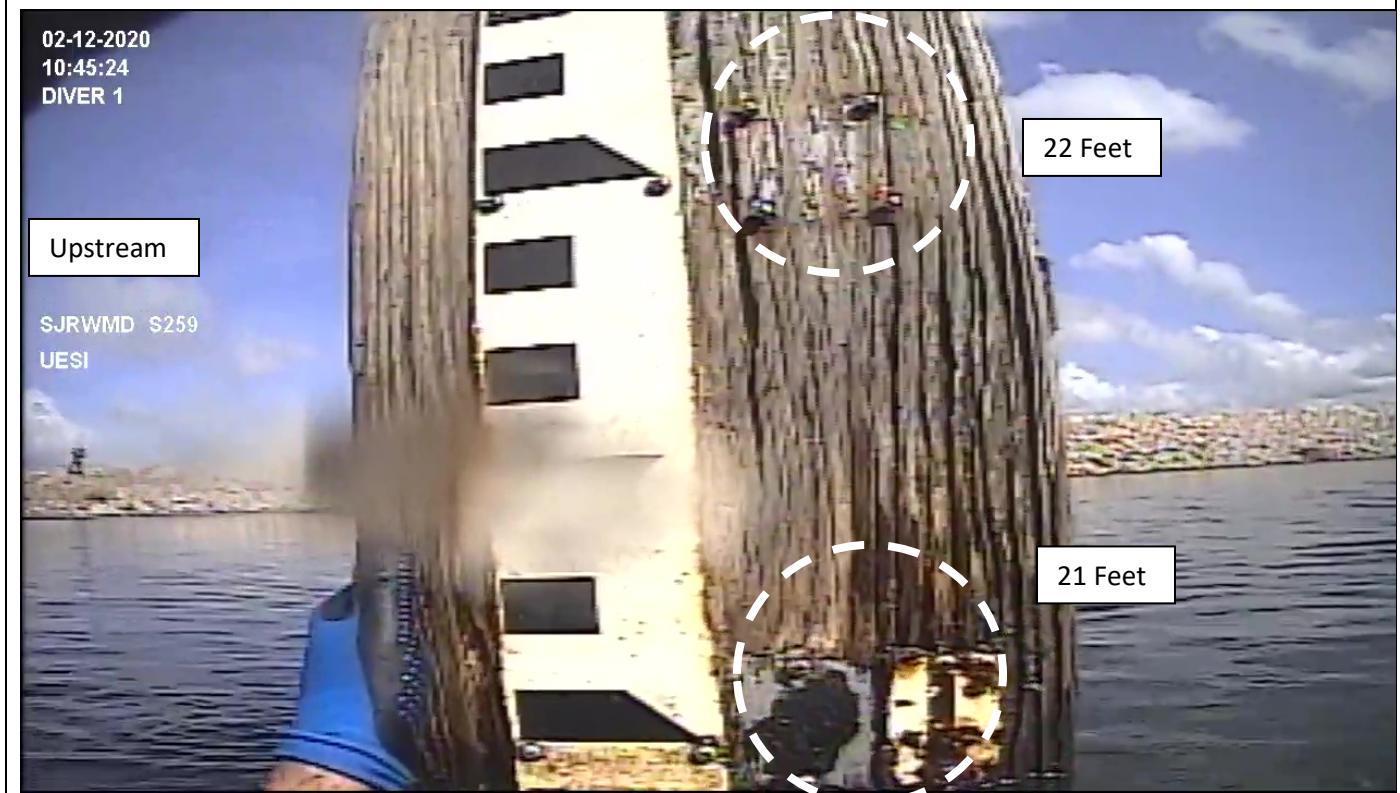
PHOTOGRAPHS

<p>Item No.: DS1000</p> <p>Additional Items</p>	<p>Rating: C-3</p>	<p>Photo Description: Upstream staff gauge with missing numbers</p>
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Deficiency: The elevation numbers from 17 and 20 to 22 are missing.

Probable Cause: The corrosion was due to chemical attack from the water and isolated areas of galvanic corrosion due to contact of dissimilar metals.

Recommendation: Replace the gauge numbering from 22 to 17 as necessary.



APPENDIX

CHECKLISTS

Structure Name/No.: S-259

UPSTREAM EROSION CONTROL

Finding #	Inspection Item	Rating	Comments	Recommended action	Probable cause
US1	Slope/Banks of Channel	1	No deficiencies noted		
US2	Rip Rap	1	No deficiencies noted		
US3	Exposed erosion-Control Fabric	1	No deficiencies noted		
US4	Evidence of stone displacement (bedding stone)	1	No deficiencies noted		
US5	Channel Stabilization and erosion control	1	No deficiencies noted		

UPSTREAM GENERAL

Finding #	Inspection Item	Rating	Comments	Recommended action	Probable cause
US50	Structural - General Concrete Condition	NA	Item not present		
US51	Structural - General Metal Condition	2	Refer to US114 and US151		
US52	Structural - General Timber Condition	2	Refer to US114		
US53	Construction Joints (Bolts, Welds)	NA	Item not present		
US54	Channels for Stoplogs or Flashboards	NA	Item not present		
US55	Settlement	1	No deficiencies noted		
US56	Shoaling/Scour	1	No deficiencies noted		
US57	Fouling/Marine Growth	1	No deficiencies noted		
US58	Debris	1	No deficiencies noted		
US59	Stilling Wells	NA	Item not present		
US60	Underwater Controls/Instruments	1	No deficiencies noted		
US61	Fenders	NA	Item not present		

UPSTREAM STRUCTURE

Finding #	Inspection Item	Rating	Comments	Recommended action	Probable cause
US100	Wingwalls	NA	Item not present		
US101	Buttresses (support arms for wall)	NA	Item not present		
US102	Abutments	NA	Item not present		
US103	Retention Walls	NA	Item not present		
US104	Headwall	NA	Item not present		
US105	Expansion/Construction Joints	NA	Item not present		
US106	Sheetpiles and Bulkheads	NA	Item not present		
US107	Wales/Tiebacks	NA	Item not present		
US108	Intake Bays	NA	Item not present		
US109	Piers	NA	Item not present		
US110	Foundation	NA	Item not present		
US111	Weir/Weir crest	NA	Item not present		
US112	Baffles	NA	Item not present		
US113	Underwater Apron Slabs	NA	Item not present		

Structure Name/No.: S-259

			(1) The access bridge has diagonal braces above water from the pile to the cross beams: (a) The 1st pile (from east end) has one loose washer on the hardware [13:44]; (b) the 4th and 6th piles each have one bolt that spins [13:53 & 14:13]; (2) The 3rd through 6th piles have diagonal braces extending into the ground toward the north and south. (a) The south channel of the 3rd pile has minor gouges on the flange edges of 2" long x 1/4" deep [13:51]; (b) the 5th pile has minor corrosion on the channel bolts [14:05]. (3) The timber piles have minor checking.		
US114	Structural Support, Bracing or Frames	2		Monitor the pier brace hardware for advanced corrosion or other damage. Monitor the piles for advanced checking or decay.	The hardware may have become loose from the minor degrading of the timber at the connections. The checking of the timber piles is normal for its age and environment.
US115	Culverts	1	No deficiencies noted		
US116	Risers	NA	Item not present		

UPSTREAM GATES

Finding #	Inspection Item	Rating	Comments	Recommended action	Probable cause
US151	Structure Gate(s)	2	The south culvert has a plate with a frame (plug) at the end and has a steel pile driven in front of the frame. The steel frame and the pile have minor to moderate pitting of 1/16" deep and occasional 1/8" deep covering 70% of the area. The north barrel gate has minor pitting on the edge of the top stiffener [14:17]. The gate has one 4" diameter area on the north side with 1/8" pitting, not observed elsewhere [14:35].	Monitor the metal for further advanced pitting.	The corrosion pitting is due to chemical attack from the water.
US152	Gate Guides and Gate Control	1	No deficiencies noted		
US153	Gate Seals & Mating Surface	1	No deficiencies noted		
US154	Cathodic Protection (entire structure)	NA	Item not present		
US155	Operator/Actuator Components	1	No deficiencies noted		
US156	Emergency Closure Gates	NA	Item not present		
US306	Navigation Lock Miter Gates	NA	Item not present		

Structure Name/No.: S-259

DOWNSTREAM EROSION CONTROL

Finding #	Inspection Item	Rating	Comments	Recommended action	Probable cause
DS1	Slope/Banks of Channel	1	No deficiencies noted		
DS2	Rip Rap	1	No deficiencies noted		
DS3	Exposed erosion-Control Fabric	1	No deficiencies noted		
DS4	Evidence of stone displacement (bedding stone)	1	No deficiencies noted		
DS5	Channel Stabilization and erosion control	1	No deficiencies noted		

DOWNSTREAM GENERAL

Finding #	Inspection Item	Rating	Comments	Recommended action	Probable cause
DS50	Structural - General Concrete Condition	NA	Item not present		
DS51	Structural - General Metal Condition	2	Refer to DS115		
DS52	Structural - General Timber Condition	NA	Item not present		
DS53	Construction Joints (Bolts, Welds)	NA	Item not present		
DS54	Channels for Stoplogs or Flashboards	NA	Item not present		
DS55	Settlement	1	No deficiencies noted		
DS56	Shoaling/Scour	1	No deficiencies noted		
DS57	Fouling/Marine Growth	1	No deficiencies noted		
DS58	Debris	NA	Item not present		
DS59	Stilling Wells	NA	Item not present		
DS60	Underwater Controls/Instruments	NA	Item not present		
DS61	Fenders	NA	Item not present		

DOWNSTREAM STRUCTURE

Finding #	Inspection Item	Rating	Comments	Recommended action	Probable cause
DS100	Wingwalls	NA	Item not present		
DS101	Buttresses (support arms for wall)	NA	Item not present		
DS102	Abutments	NA	Item not present		
DS103	Retention Walls	NA	Item not present		
DS104	Headwall	NA	Item not present		
DS105	Expansion/Construction Joints	NA	Item not present		
DS106	Sheetpiles and Bulkheads	NA	Item not present		
DS107	Wales/Tiebacks	NA	Item not present		
DS108	Intake Bays	NA	Item not present		
DS109	Piers	NA	Item not present		
DS110	Foundation	NA	Item not present		
DS111	Weir/Weir crest	NA	Item not present		
DS112	Baffles	NA	Item not present		
DS113	Underwater Apron Slabs	NA	Item not present		
DS114	Structural Support, Bracing or Frames	NA	Item not present		

Structure Name/No.: S-259

DS115	Culverts	2	(1) The east ends of both barrels are suspended 6 to 8" above the channel bottom for approximately 10'. The bottom does not appear to have scoured [11:05]. (2) There are several 3" diameter pvc pipes on the downstream side, away from the discharge end [11:16]. (3) There is a field joint at 115' in from the downstream end in the north barrel. The joint has a 1" gap x 1" penetration nearly all around. There is hard back in the joint [12:32]. (4) The north barrel has screws protruding up to 1" into the interior of the barrel all around at 196' in from the downstream end [12:42].	(1) Monitor the suspended downstream ends of the barrels for additional suspended length or damage. (2) Monitor the pvc pipes for interference with the flow. (3) Monitor the field joint at 115' of the north barrel for movement or damage. (4) Monitor the screws in the north barrel for damage or debris catching on them.	(1) The suspended ends may be intended after placement of the riprap. (2) The 3" pvc pipes were most likely used to pump grout for the lining work. (3) The field joint was intentional during the lining work. (4) The screws are most likely from the gate framework from the exterior.
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DOWNSTREAM GATES

Finding #	Inspection Item	Rating	Comments	Recommended action	Probable cause
DS151	Structure Gate(s)	2	The barrel plug plate on the south barrel has minor corrosion on the hardware.	Monitor the corrosion on the south barrel plug.	The south barrel plug was intentional.
DS152	Gate Guides and Gate Control	NA	Item not present		
DS153	Gate Seals & Mating Surface	NA	Item not present		
DS154	Cathodic Protection (entire structure)	NA	Item not present		
DS155	Operator/Actuator Components	NA	Item not present		
DS156	Emergency Closure Gates	NA	Item not present		
DS157	Navigation Lock Miter Gates	NA	Item not present		
DS1000	Additional Items and Comments	3	(1) C-3: The elevation numbers from 17 and 20 to 22 are missing [10:47]. (2) C-2: The gauge plate has minor corrosion on the edges. (3) C-2: The timber board has minor checking and wear [10:49].	Replace the gauge numbering from 22 to 17 as necessary. Monitor the gauge plate for advanced corrosion and the timber board for advanced decay.	The corrosion was due to chemical attack from the water and isolated areas of galvanic corrosion due to contact of dissimilar metals. The timber decay is normal damage from its age and environment.