

Appendix A.1 – CCTV Video Links and Inspection Reports

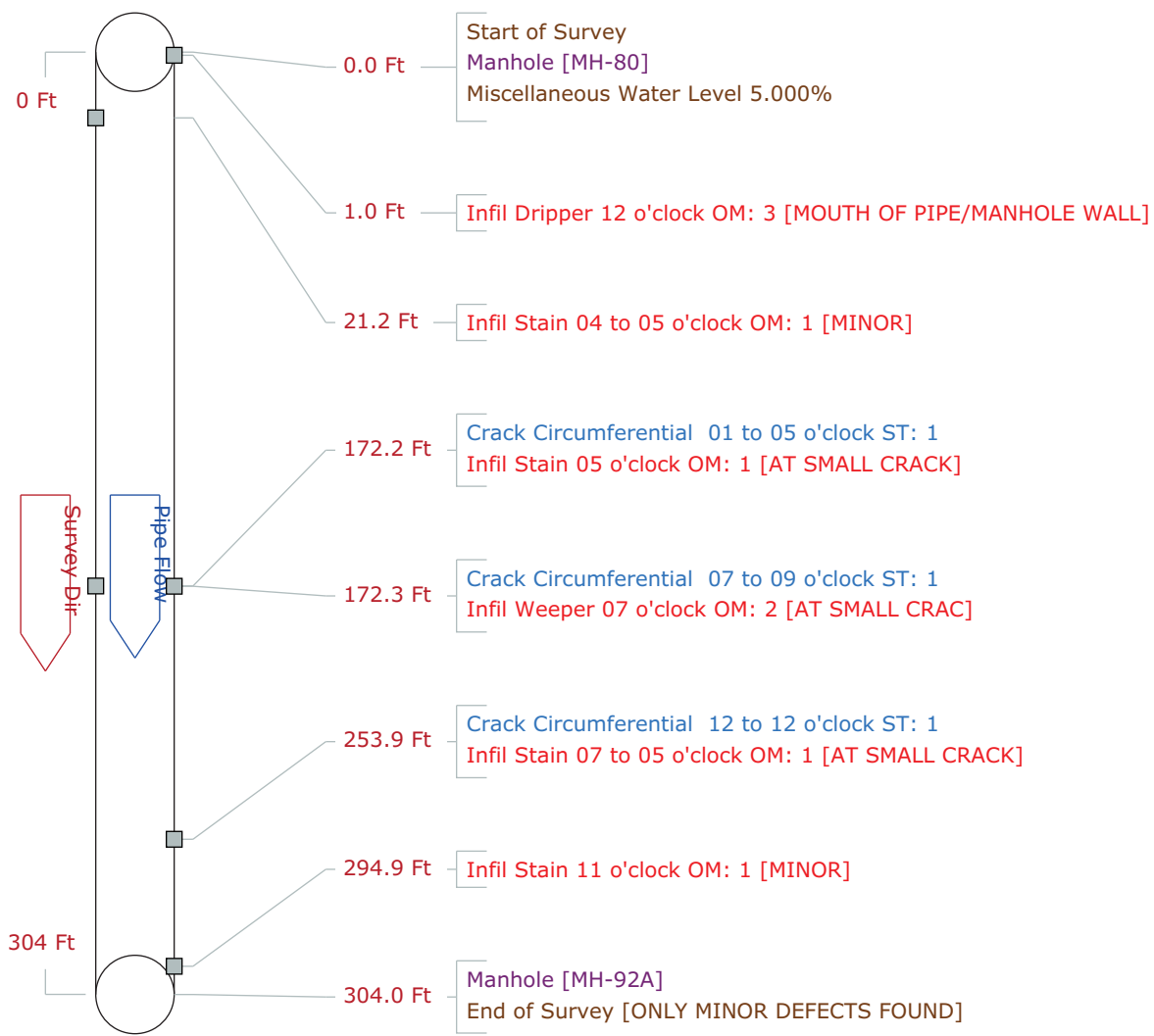
Please see attached link for access to CCTV Inspection Videos:

https://aecom.sharepoint.com/:f:/r/sites/CityofAlexandriaATGOronoco/Shared%20Documents/General/Storm%20pipe%20rehabilitation%20design/500_Deliverables/4.%20100%25%20Design/CCTV%20Inspection/CCTV%20Videos?csf=1&web=1&e=abzBzc

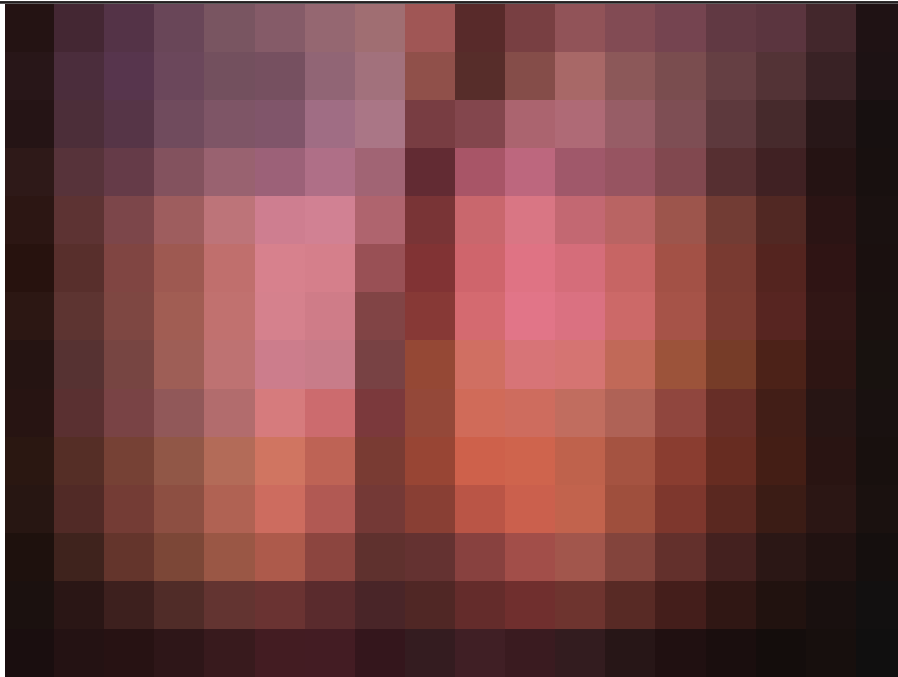
Pipe Graphic Report of PLR MH-80-MH-92A

for **GREELEY & HANSEN LLC**

Setup 1791	Surveyed By SMU	Certificate # U-809-9223	Owner CITY OF ALEXANDRIA				
Reviewed By	Reviewer #	Work Order E21-02-01					
Customer GREELEY & HANSEN LLC		P/O #					
Media Label GREHA-12-1	Project OLD TOWN SOUTH						
Date 2022/12/01	Time 9:32	Weather Dry - no Precipitation	Pre-Cleaning N				
Flow control Not Controlled	Survey Purpose Routine Assessment		Date Cleaned				
Street 222 ORONOCO ST.	City ALEXANDRIA	Drainage area P.I.					
Location Code Local rural streets with light traffic, town and city back streets		Pipe Use Sanitary Sewage Pipe					
Location details UP STREAM MANHOLE IS IN ORONOCO ST. AT N. FAIRFAX ST.	Height 44	Width 72	ins				
Shape Other	Material Not Known	Lining Spray Liner					
Coating	Pipe Joint length Ft	Total length 304.0	Ft				
Length Surveyed 304.00 Ft	Year Constructed	Year Renewed	<table border="1"> <tr> <td>Structural</td> <td>O & M</td> </tr> <tr> <td>Miscellaneous</td> <td>Constructional</td> </tr> </table>	Structural	O & M	Miscellaneous	Constructional
Structural	O & M						
Miscellaneous	Constructional						
Additional info SPECIAL INSPECTION MAIN TARGET IS INFILTRATION.							
Up MH-80	Rim to invert 11.00	Grade to invert	Rim to grade Ft				
Down MH-92A	Rim to invert 15.00	Grade to invert	Rim to grade Ft				

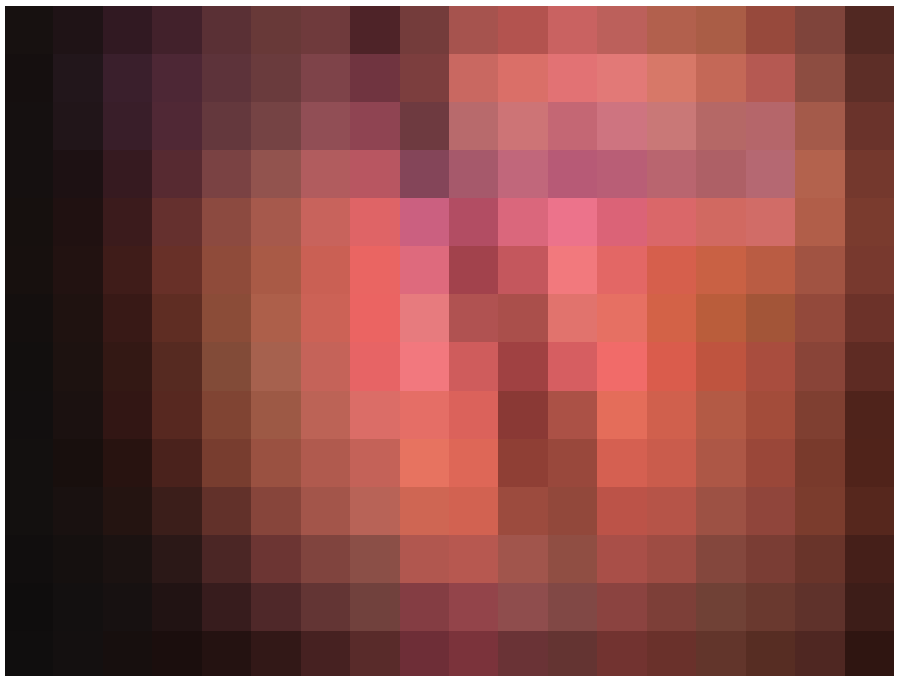


Work Order	Surveyed On 2022/12/01	Setup 1791
Street Name 222 ORONOCO ST.	Video GREHA-12-1	
City Name ALEXANDRIA	Weather Dry - no Precipitation during survey	
Location Local rural streets with light traffic, town and city back streets		
From Manhole MH-80	To Manhole MH-92A	Direction Downstream



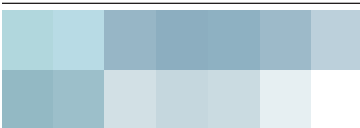
Date: 2022/12/01 **Distance:** 253.9 Ft **Obs:** Crack Circumferential

Comments:

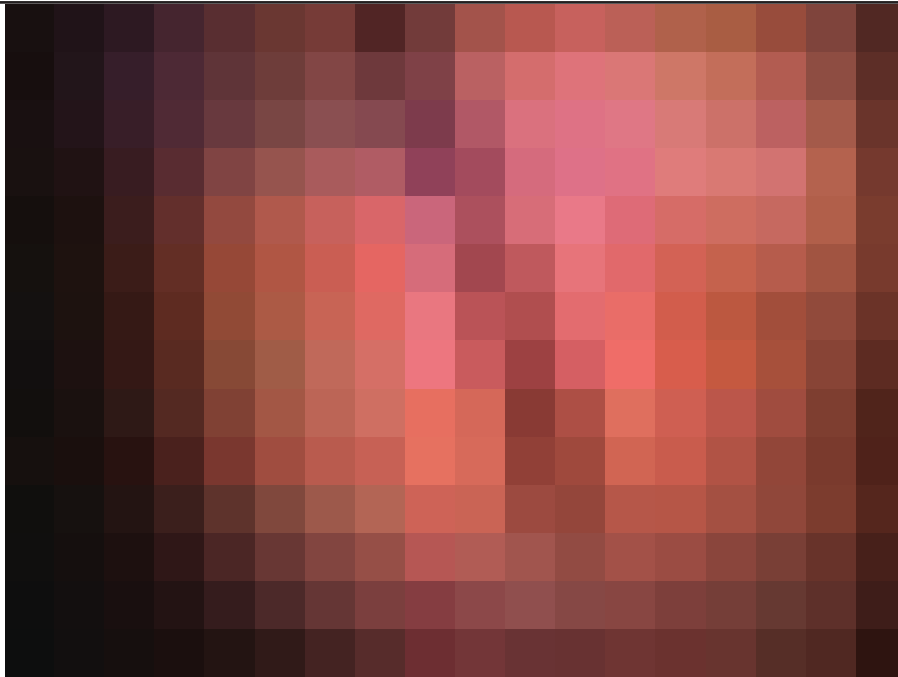


Date: 2022/12/01 **Distance:** 253.9 Ft **Obs:** Crack Circumferential

Comments:

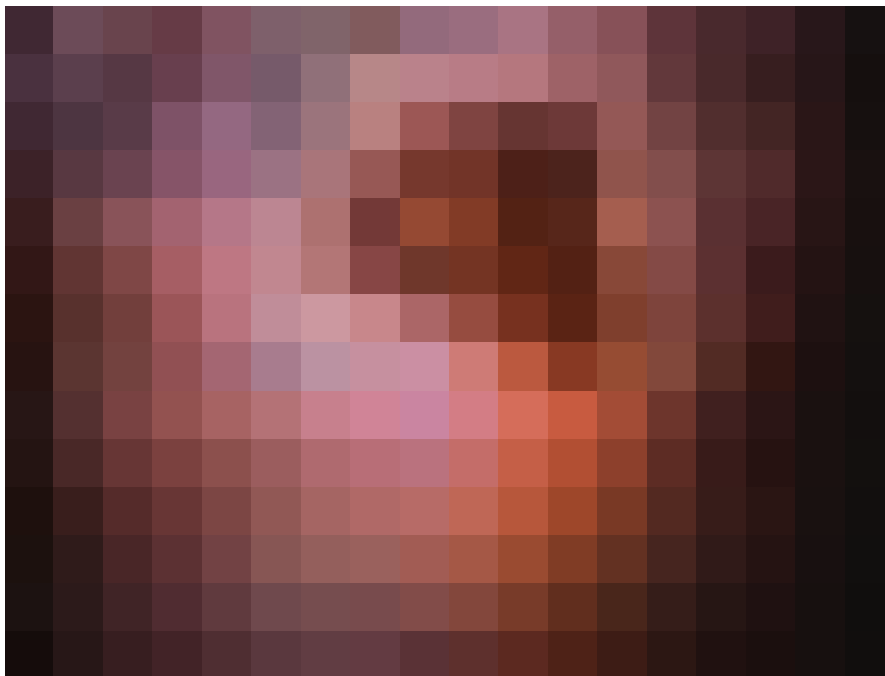


Work Order	Surveyed On 2022/12/01	Setup 1791
Street Name 222 ORONOCO ST.	Video GREHA-12-1	
City Name ALEXANDRIA	Weather Dry - no Precipitation during survey	
Location Local rural streets with light traffic, town and city back streets		
From Manhole MH-80	To Manhole MH-92A	Direction Downstream

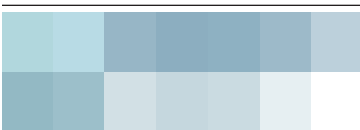


Date: 2022/12/01 **Distance:** 253.9 Ft **Obs:** Infil Stain

Comments: AT SMALL CRACK



Date: 2022/12/01 **Distance:** 294.9 Ft **Obs:** Infil Stain



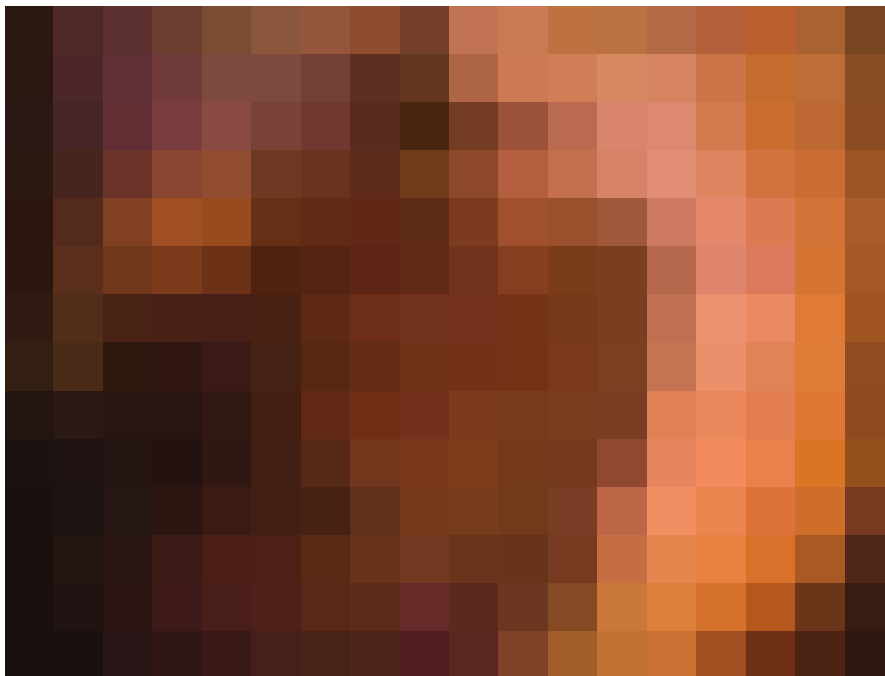
Mobile Dredging & Video Pipe, Inc.
Phone: 301-931-0707
Address: 11420 Old Baltimore Pike , Beltsville, MD
Fax: 301-931-0990

Work Order	Surveyed On 2022/12/01	Setup 1791
Street Name 222 ORONOCO ST.	Video GREHA-12-1	
City Name ALEXANDRIA	Weather Dry - no Precipitation during survey	
Location Local rural streets with light traffic, town and city back streets		
From Manhole MH-80	To Manhole MH-92A	Direction Downstream

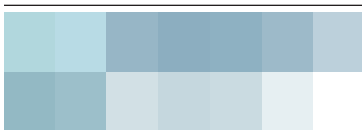


Date: 2022/12/01 **Distance:** 1.0 Ft **Obs:** Infil Dripper

Comments: MOUTH OF PIPE/MANHOLE WALL

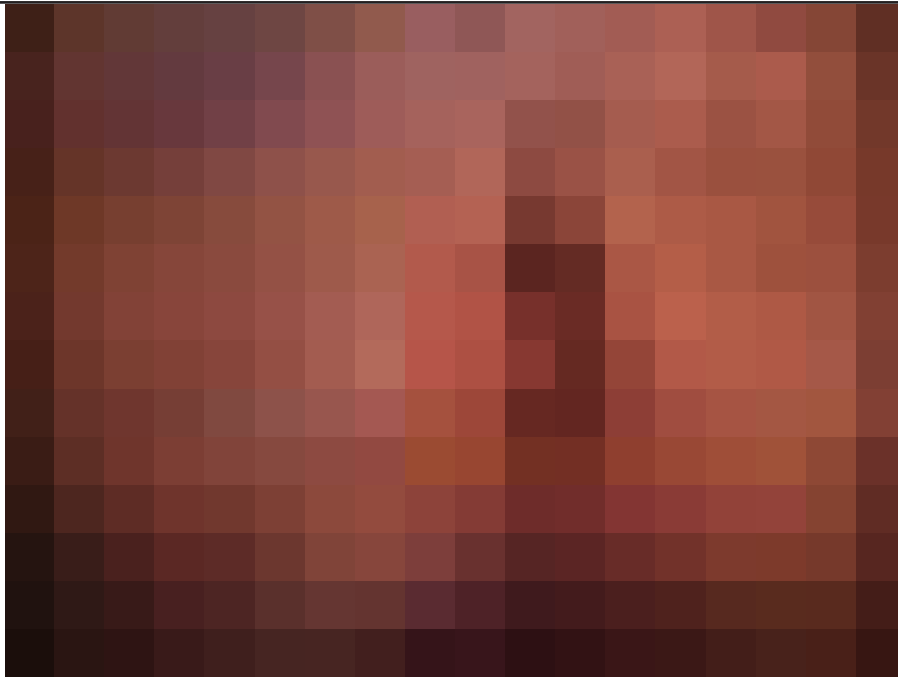


Date: 2022/12/01 **Distance:** 21.2 Ft **Obs:** Infil Stain



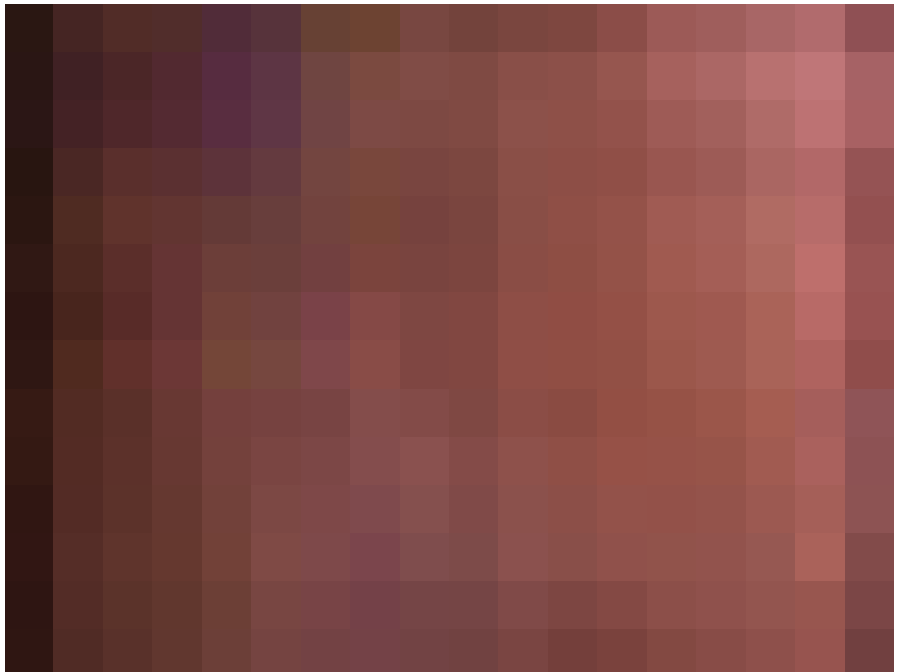
Mobile Dredging & Video Pipe, Inc.
Phone: 301-931-0707
Address: 11420 Old Baltimore Pike , Beltsville, MD
Fax: 301-931-0990

Work Order	Surveyed On 2022/12/01	Setup 1791
Street Name 222 ORONOCO ST.	Video GREHA-12-1	
City Name ALEXANDRIA	Weather Dry - no Precipitation during survey	
Location Local rural streets with light traffic, town and city back streets		
From Manhole MH-80	To Manhole MH-92A	Direction Downstream

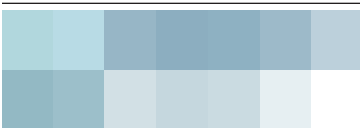


Date: 2022/12/01 **Distance:** 172.2 Ft **Obs:** Crack Circumferential

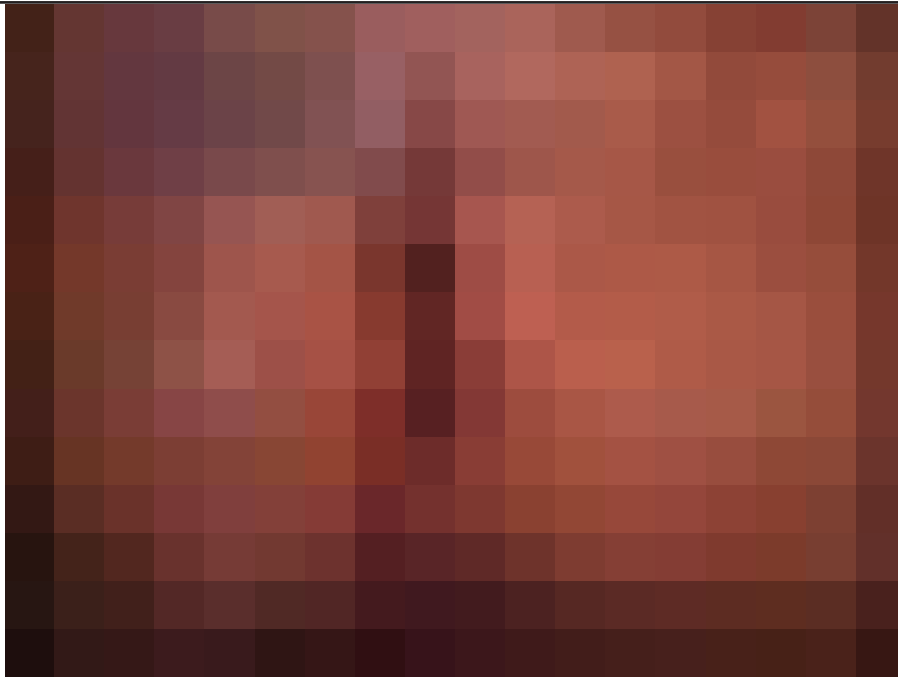
Comments:



Date: 2022/12/01 **Distance:** 172.2 Ft **Obs:** Crack Circumferential

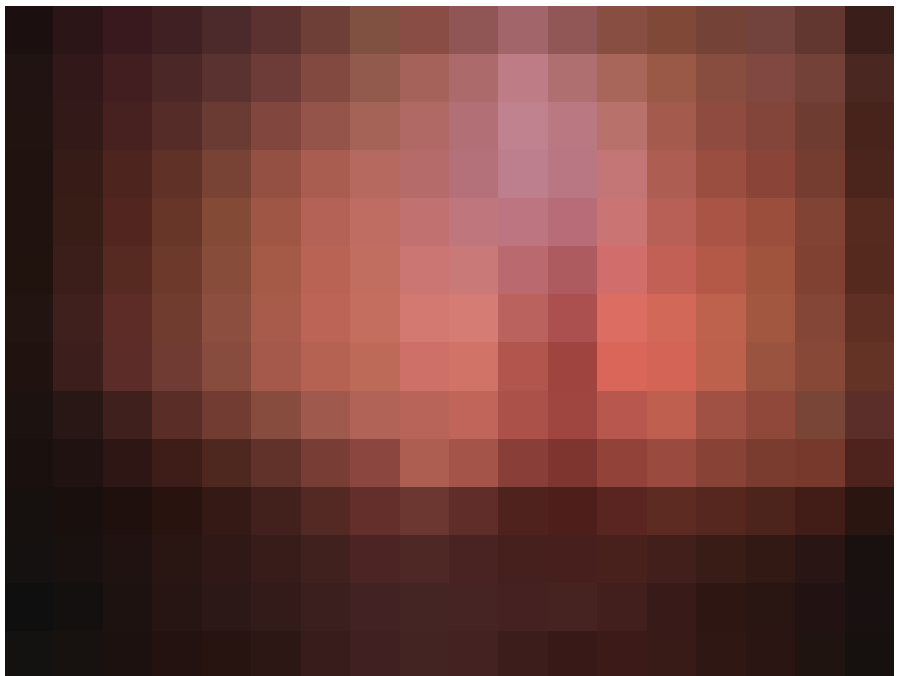


Work Order	Surveyed On 2022/12/01	Setup 1791
Street Name 222 ORONOCO ST.	Video GREHA-12-1	
City Name ALEXANDRIA	Weather Dry - no Precipitation during survey	
Location Local rural streets with light traffic, town and city back streets		
From Manhole MH-80	To Manhole MH-92A	Direction Downstream

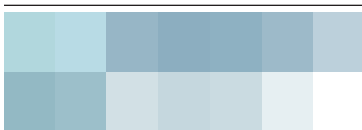


Date: 2022/12/01 **Distance:** 172.2 Ft **Obs:** Infil Stain

Comments: AT SMALL CRACK

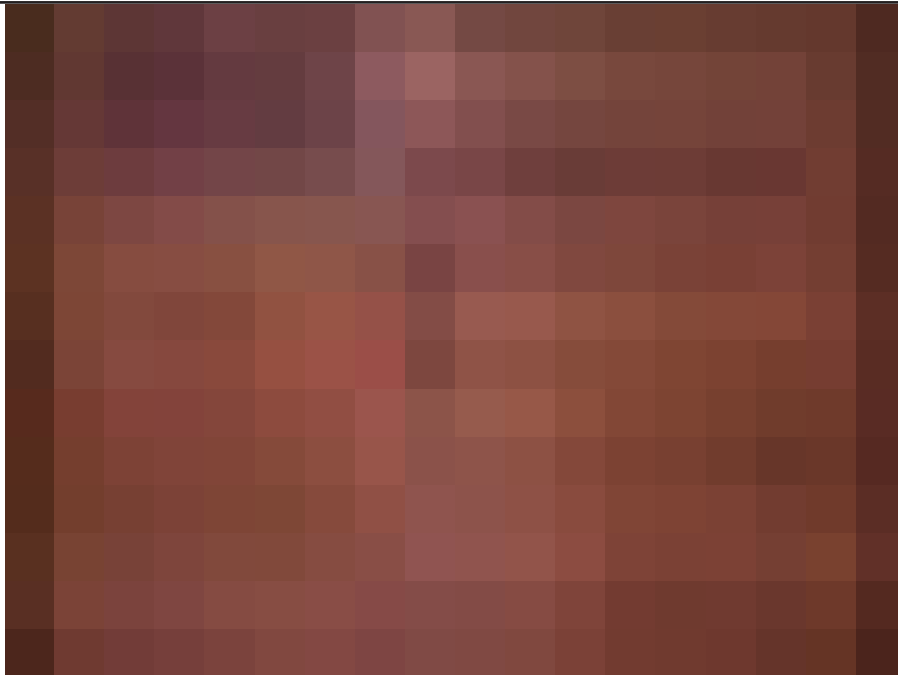


Date: 2022/12/01 **Distance:** 172.2 Ft **Obs:** Infil Stain



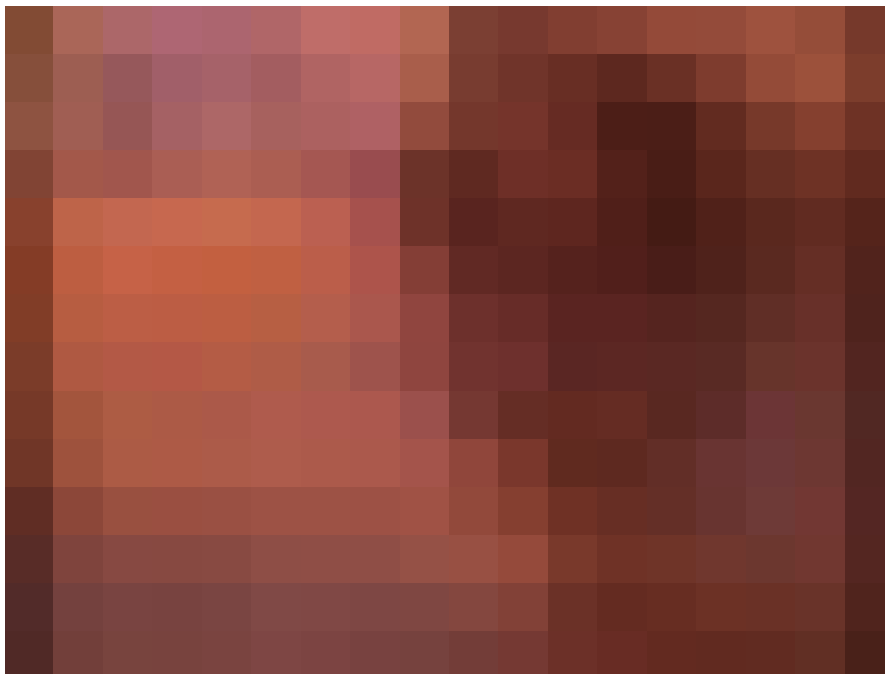
Mobile Dredging & Video Pipe, Inc.
Phone: 301-931-0707
Address: 11420 Old Baltimore Pike , Beltsville, MD
Fax: 301-931-0990

Work Order	Surveyed On 2022/12/01	Setup 1791
Street Name 222 ORONOCO ST.	Video GREHA-12-1	
City Name ALEXANDRIA	Weather Dry - no Precipitation during survey	
Location Local rural streets with light traffic, town and city back streets		
From Manhole MH-80	To Manhole MH-92A	Direction Downstream

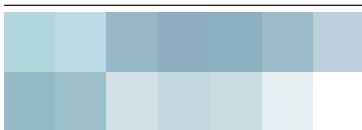


Date: 2022/12/01 **Distance:** 172.3 Ft **Obs:** Crack Circumferential

Comments:



Date: 2022/12/01 **Distance:** 172.3 Ft **Obs:** Infil Weeper



Tabular Report of PSR MH-80-MH-92A

for **GREELEY & HANSEN LLC**

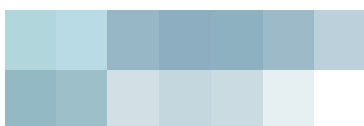
Setup	1791	Surveyed By	SMU	Certificate #	U-809-9223	Owner	CITY OF ALEXANDRIA
Reviewed By		Reviewer #		Work Order	E21-02-01		
Customer	GREELEY & HANSEN LLC			P/O #			
Media Label	GREHA-12-1	Project	OLD TOWN SOUTH				
Date	2022/12/01	Time	9:32	Weather	Dry - no Precipitation	Pre-Cleaning	N
Flow control	Not Controlled	Survey Purpose	Routine Assessment	Direction	Down		
Inspection Status	Complete Inspection	Consequence Of Failure		Pressure			
Inspection Technology Used	<input checked="" type="checkbox"/> CCTV <input type="checkbox"/> Laser <input type="checkbox"/> Sonar <input type="checkbox"/> Sidewall <input type="checkbox"/> Zoom <input type="checkbox"/> Other						

Street	222 ORONOCO ST.	City	ALEXANDRIA	Drainage area	P.I.
Location Code	Local rural streets with light traffic, town and city back streets		Pipe Use	Sanitary Sewage Pipe	
Location details	UP STREAM MANHOLE IS IN ORONOCO ST. AT N. FAIRFAX ST.		Height	44	Width 72 ins
Shape	Other	Material	Not Known	Lining	Spray Liner
Coating		Pipe Joint length	Ft	Total length	304.0 Ft
Length Surveyed	304.0 Ft	Year Constructed		Year Renewed	
Up	MH-80	Rim to invert	11.00	Grade to invert	
Northing		Easting		Elevation	
Down	MH-92A	Rim to invert	15.00	Grade to invert	
Northing		Easting		Elevation	
Coordinate System		Vertical Datum			
GPS Accuracy					
Additional info	SPECIAL INSPECTION MAIN TARGET IS INFILTRATION.				Structural O & M Miscellaneous Constructional

Count	Video	CD Code	Val1	Val2	%	Jnt	Fr	To	ImRef	Remarks
0.0		ST								Start of Survey
0.0		AMH								Manhole
0.0		MWL			5.000					Miscellaneous Water Level
1.0		ID					12			Infil Dripper
21.2		IS					04	05		Infil Stain
172.2		CC				J	01	05		Crack Circumferential
172.2		IS				J	05			Infil Stain
172.3		CC				J	07	09		Crack Circumferential
172.3		IW					07			Infil Weeper
253.9		CC					12	12		Crack Circumferential
253.9		IS					07	05		Infil Stain
294.9		IS					11			Infil Stain
304.0		AMH								Manhole
304.0		FH								End of Survey

304.0 Ft Total Length Surveyed

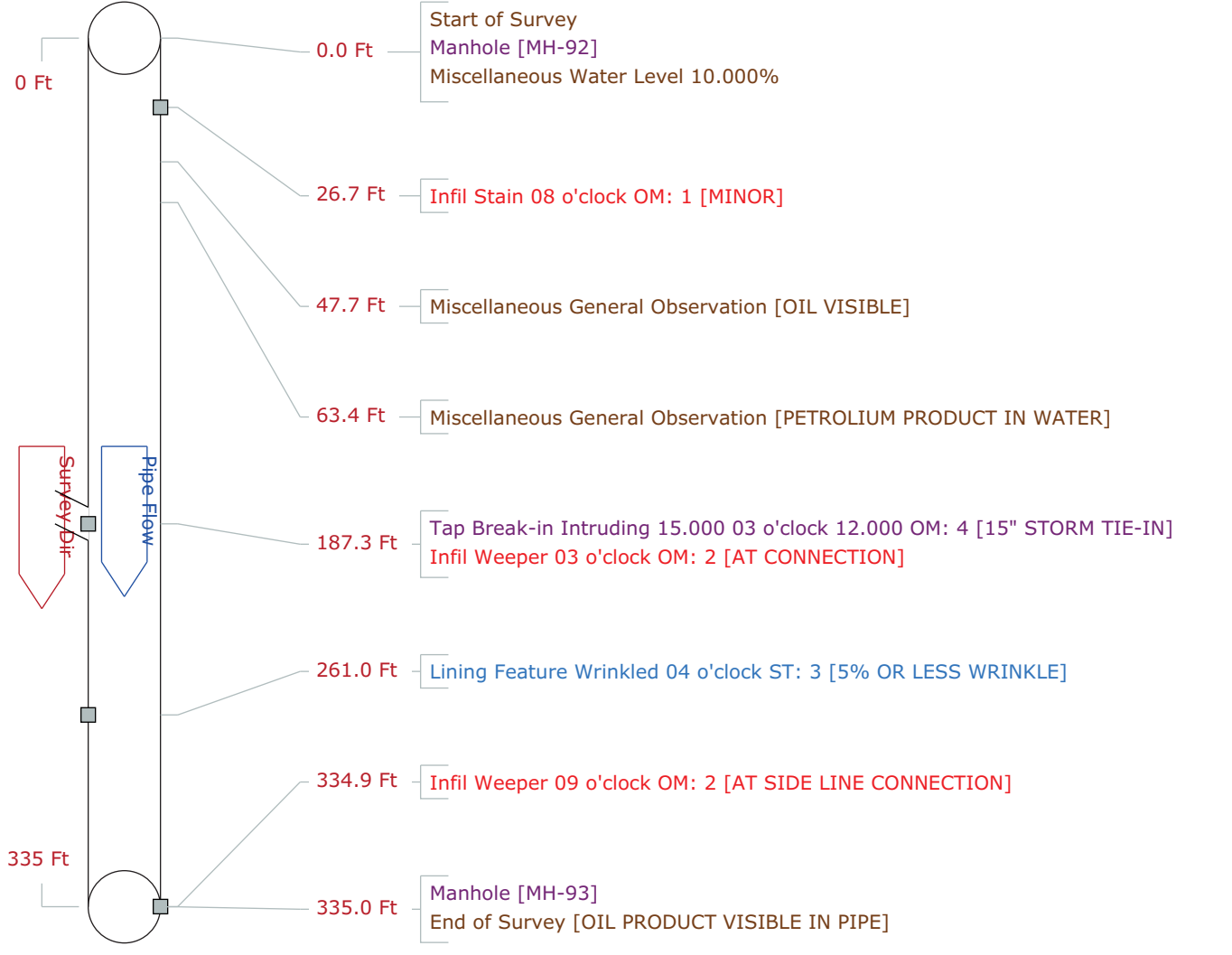
Scores	Structural:	Pipe Rating	3	Pipe Ratings Index	1	Quick Rating	1300
	O&M:	Pipe Rating	9	Pipe Ratings Index	1.5	Quick Rating	3121
	Overall	Pipe Rating	12	Pipe Ratings Index	1.3	Quick Rating	3121


Mobile Dredging & Video Pipe, Inc.
 Phone:301-931-0707
 Address: 11420 Old Baltimore Pike , Beltsville, MD
 Fax:301-931-0990

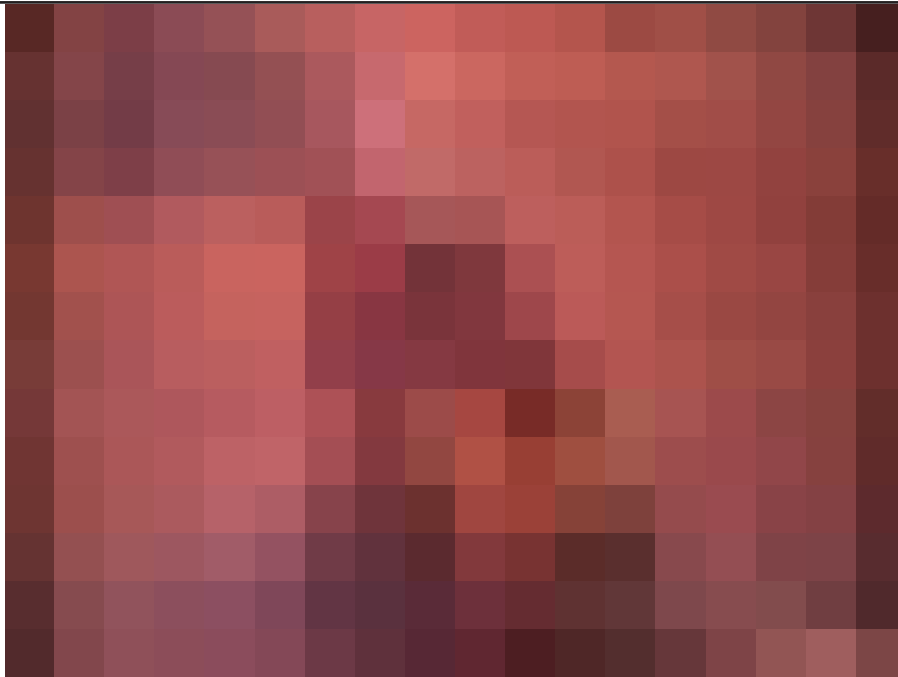
Pipe Graphic Report of PLR MH-92-MH-93

for **GREELEY & HANSEN LLC**

Setup 1793	Surveyed By SMU	Certificate # U-809-9223	Owner CITY OF ALEXANDRIA				
Reviewed By	Reviewer #	Work Order E21-02-01					
Customer GREELEY & HANSEN LLC		P/O #					
Media Label GREHA-12-1	Project OLD TOWN SOUTH						
Date 2022/12/01	Time 10:40	Weather Dry - no Precipitation	Pre-Cleaning N				
Flow control Not Controlled	Survey Purpose Routine Assessment		Date Cleaned				
Street 119 ORONOCO ST.	City ALEXANDRIA	Drainage area P.I.					
Location Code Local rural streets with light traffic, town and city back streets		Pipe Use Sanitary Sewage Pipe					
Location details UP STREAM MANHOLE IS IN FRONT OF 119 ORONOCO ST.	Height 44	Width 72	ins				
Shape Other	Material Not Known	Lining Cured in Place					
Coating	Pipe Joint length Ft	Total length 335.0	Ft				
Length Surveyed 335.00 Ft	Year Constructed	Year Renewed	<table border="1"> <tr> <td>Structural</td> <td>O & M</td> </tr> <tr> <td>Miscellaneous</td> <td>Constructional</td> </tr> </table>	Structural	O & M	Miscellaneous	Constructional
Structural	O & M						
Miscellaneous	Constructional						
Additional info SPECIAL INSPECTION MAIN TARGET IS INFILTRATION.							
Up MH-92	Rim to invert	Grade to invert	Rim to grade Ft				
Down MH-93	Rim to invert	Grade to invert	Rim to grade Ft				

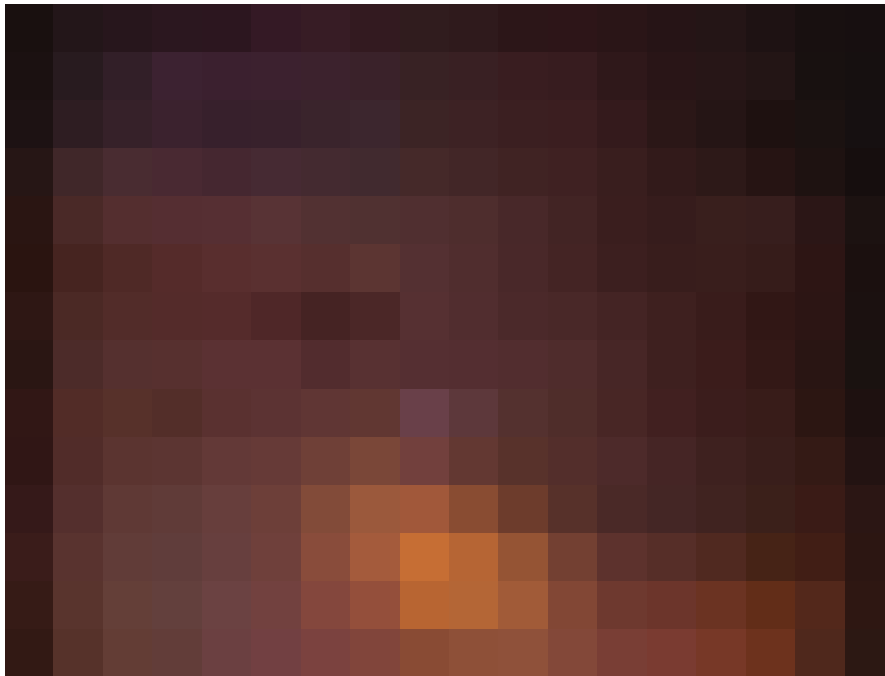


Work Order	Surveyed On 2022/12/01	Setup 1793
Street Name 119 ORONOCO ST.	Video GREHA-12-1	
City Name ALEXANDRIA	Weather Dry - no Precipitation during survey	
Location Local rural streets with light traffic, town and city back streets		
From Manhole MH-92	To Manhole MH-93	Direction Downstream



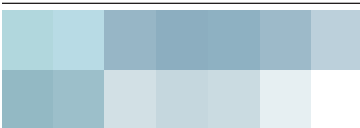
Date: 2022/12/01 **Distance:** 26.7 Ft **Obs:** Infil Stain

Comments: MINOR



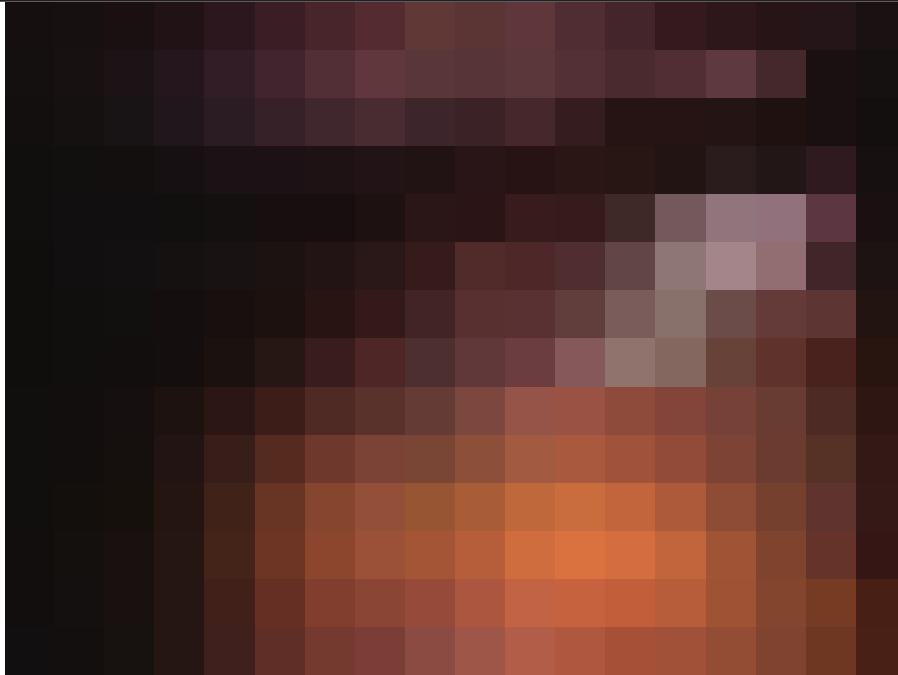
Date: 2022/12/01 **Distance:** 47.7 Ft **Obs:** Miscellaneous General Observation

Comments: OIL VISIBLE

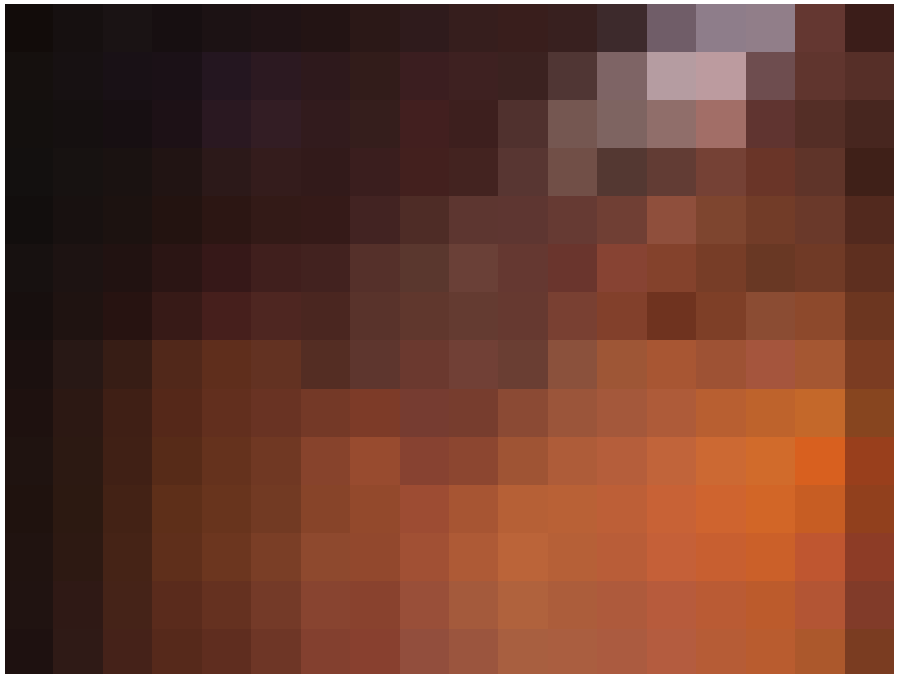


Mobile Dredging & Video Pipe, Inc.
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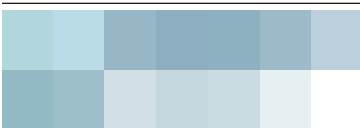
Work Order	Surveyed On 2022/12/01	Setup 1793
Street Name 119 ORONOCO ST.	Video GREHA-12-1	
City Name ALEXANDRIA	Weather Dry - no Precipitation during survey	
Location Local rural streets with light traffic, town and city back streets		
From Manhole MH-92	To Manhole MH-93	Direction Downstream



Date: 2022/12/01 **Distance:** 47.7 Ft **Obs:** Miscellaneous General Observation
Comments: OIL VISIBLE



Date: 2022/12/01 **Distance:** 47.7 Ft **Obs:** Miscellaneous General Observation



Work Order	Surveyed On 2022/12/01	Setup 1793
Street Name 119 ORONOCO ST.	Video GREHA-12-1	
City Name ALEXANDRIA	Weather Dry - no Precipitation during survey	
Location Local rural streets with light traffic, town and city back streets		
From Manhole MH-92	To Manhole MH-93	Direction Downstream

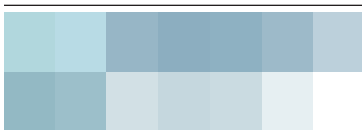


Date: 2022/12/01 **Distance:** 47.7 Ft **Obs:** Miscellaneous General Observation

Comments: OIL VISIBLE

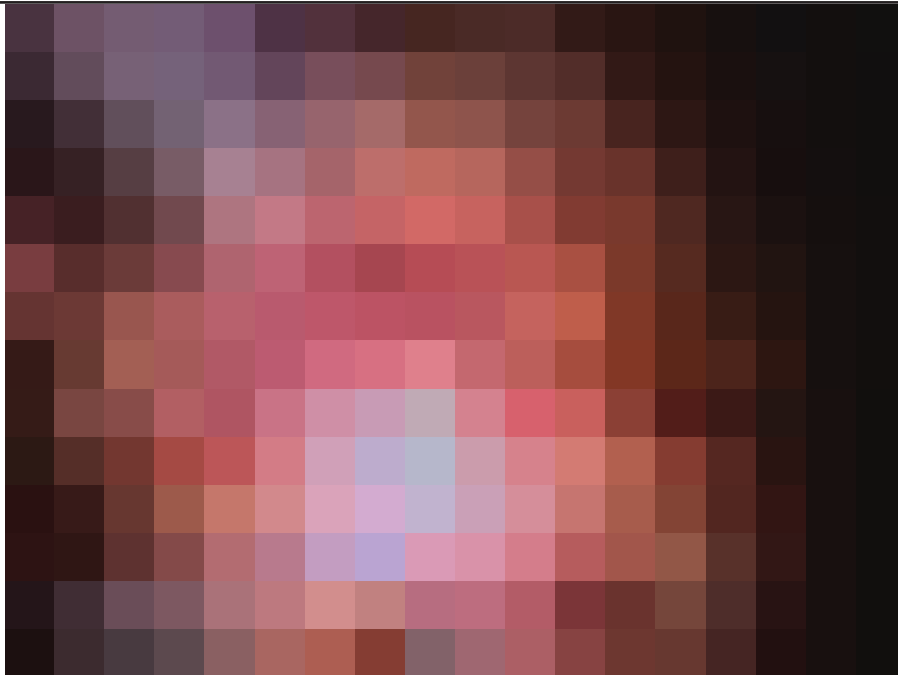


Date: 2022/12/01 **Distance:** 47.7 Ft **Obs:** Miscellaneous General Observation



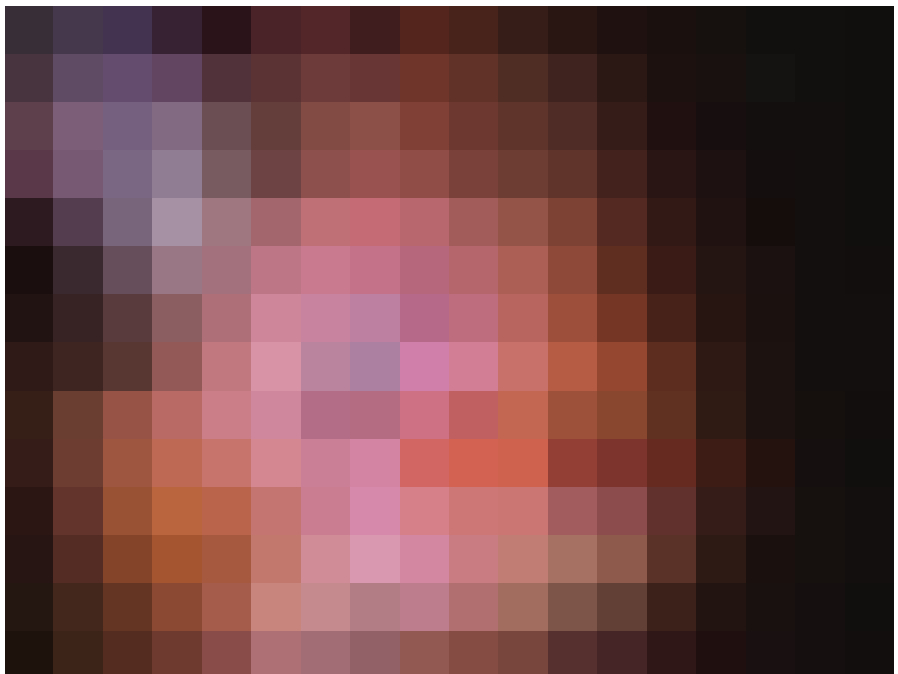
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Phone: 301-931-0707
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Fax: 301-931-0990

Work Order	Surveyed On 2022/12/01	Setup 1793
Street Name 119 ORONOCO ST.	Video GREHA-12-1	
City Name ALEXANDRIA	Weather Dry - no Precipitation during survey	
Location Local rural streets with light traffic, town and city back streets		
From Manhole MH-92	To Manhole MH-93	Direction Downstream

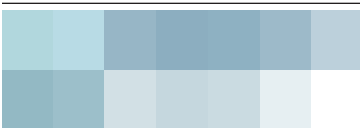


Date: 2022/12/01 **Distance:** 47.7 Ft **Obs:** Miscellaneous General Observation

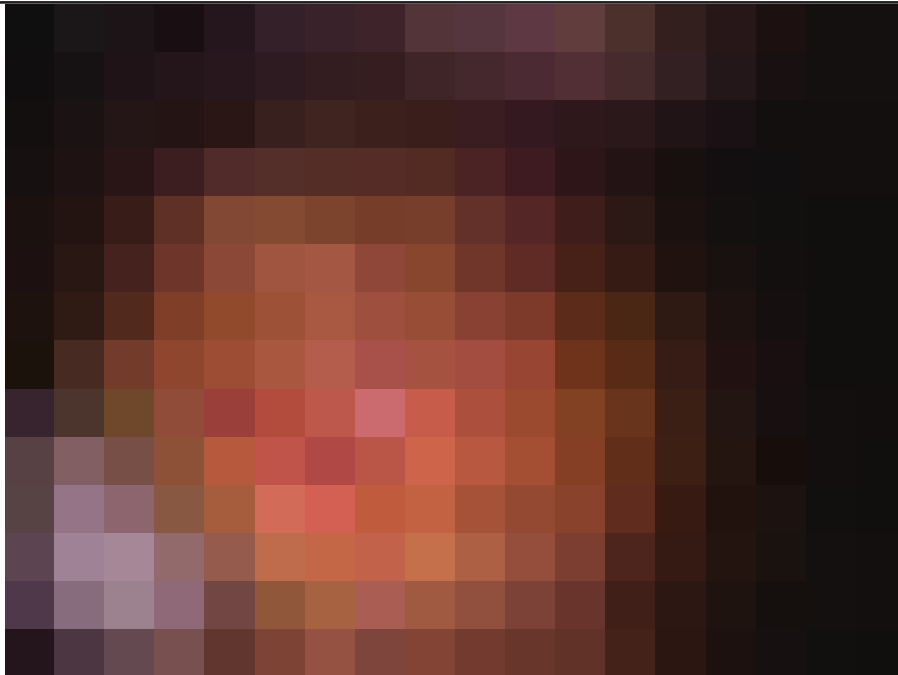
Comments: OIL VISIBLE



Date: 2022/12/01 **Distance:** 63.4 Ft **Obs:** Miscellaneous General Observation

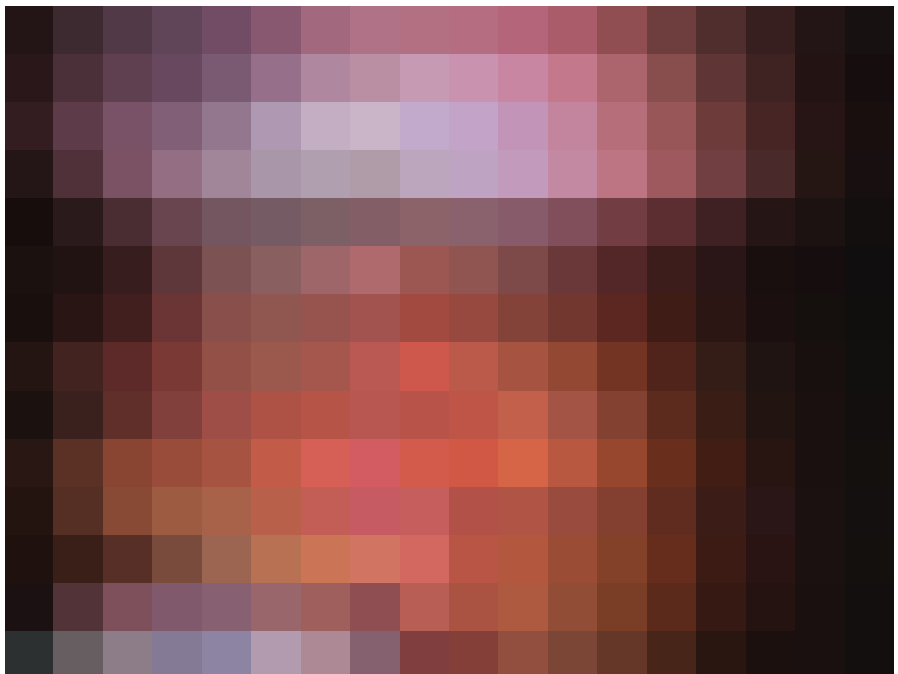


Work Order	Surveyed On 2022/12/01	Setup 1793
Street Name 119 ORONOCO ST.	Video GREHA-12-1	
City Name ALEXANDRIA	Weather Dry - no Precipitation during survey	
Location Local rural streets with light traffic, town and city back streets		
From Manhole MH-92	To Manhole MH-93	Direction Downstream

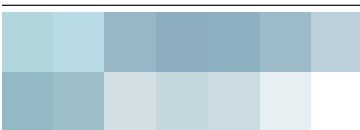


Date: 2022/12/01 **Distance:** 63.4 Ft **Obs:** Miscellaneous General Observation

Comments: PETROLIUM PRODUCT IN WATER

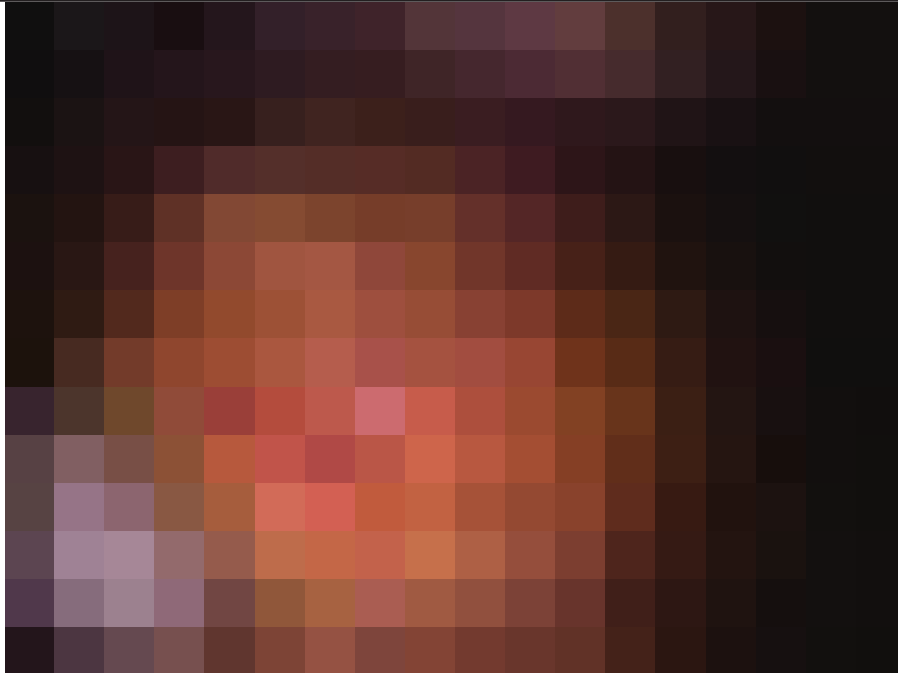


Date: 2022/12/01 **Distance:** 63.4 Ft **Obs:** Miscellaneous General Observation



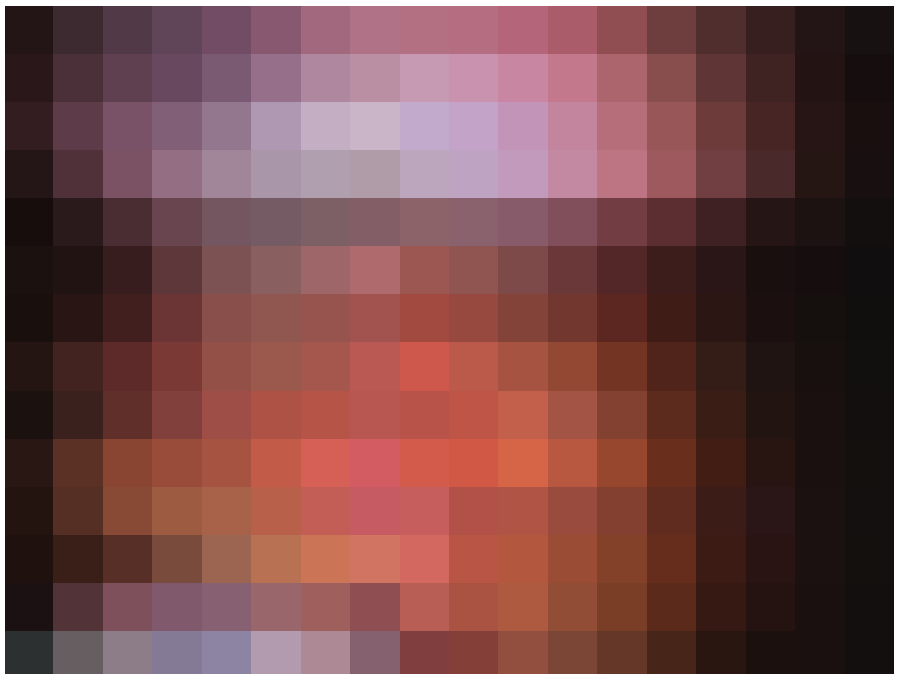
Mobile Dredging & Video Pipe, Inc.
Phone: 301-931-0707
Address: 11420 Old Baltimore Pike , Beltsville, MD
Fax: 301-931-0990

Work Order	Surveyed On 2022/12/01	Setup 1793
Street Name 119 ORONOCO ST.	Video GREHA-12-1	
City Name ALEXANDRIA	Weather Dry - no Precipitation during survey	
Location Local rural streets with light traffic, town and city back streets		
From Manhole MH-92	To Manhole MH-93	Direction Downstream

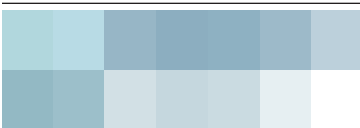


Date: 2022/12/01 **Distance:** 63.4 Ft **Obs:** Miscellaneous General Observation

Comments: PETROLIUM PRODUCT IN WATER

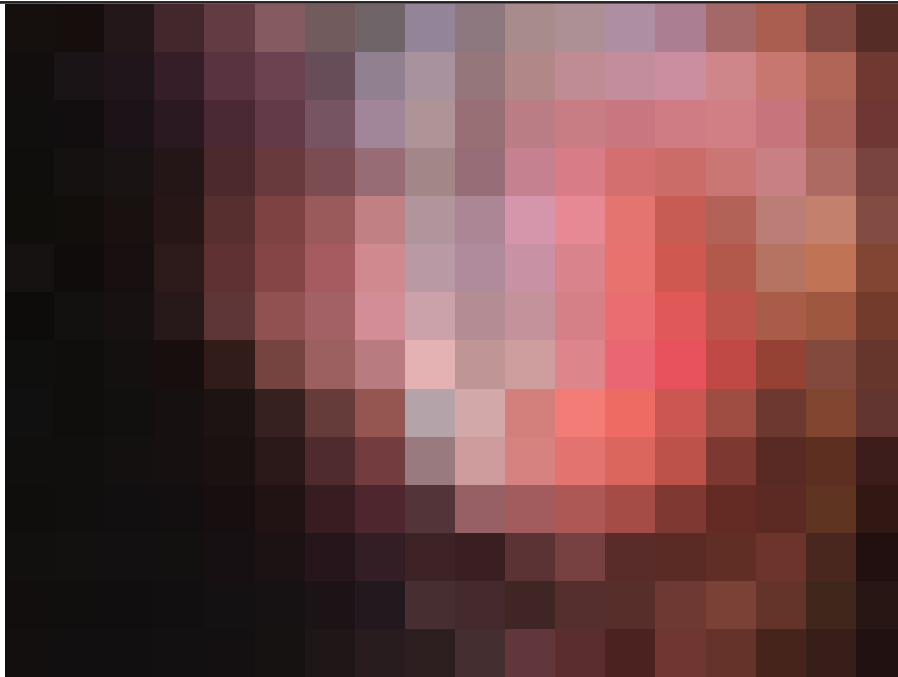


Date: 2022/12/01 **Distance:** 63.4 Ft **Obs:** Miscellaneous General Observation



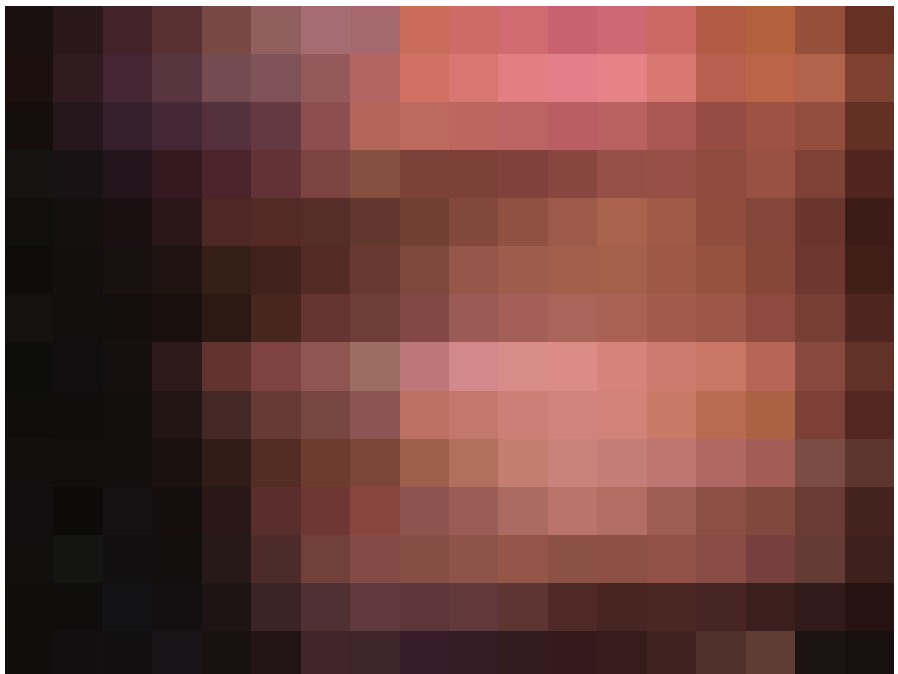
Mobile Dredging & Video Pipe, Inc.
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Work Order	Surveyed On 2022/12/01	Setup 1793
Street Name 119 ORONOCO ST.	Video GREHA-12-1	
City Name ALEXANDRIA	Weather Dry - no Precipitation during survey	
Location Local rural streets with light traffic, town and city back streets		
From Manhole MH-92	To Manhole MH-93	Direction Downstream

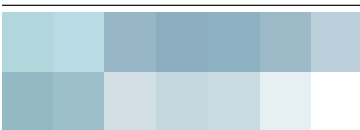


Date: 2022/12/01 **Distance:** 187.3 Ft **Obs:** Infil Weeper

Comments: AT CONNECTION

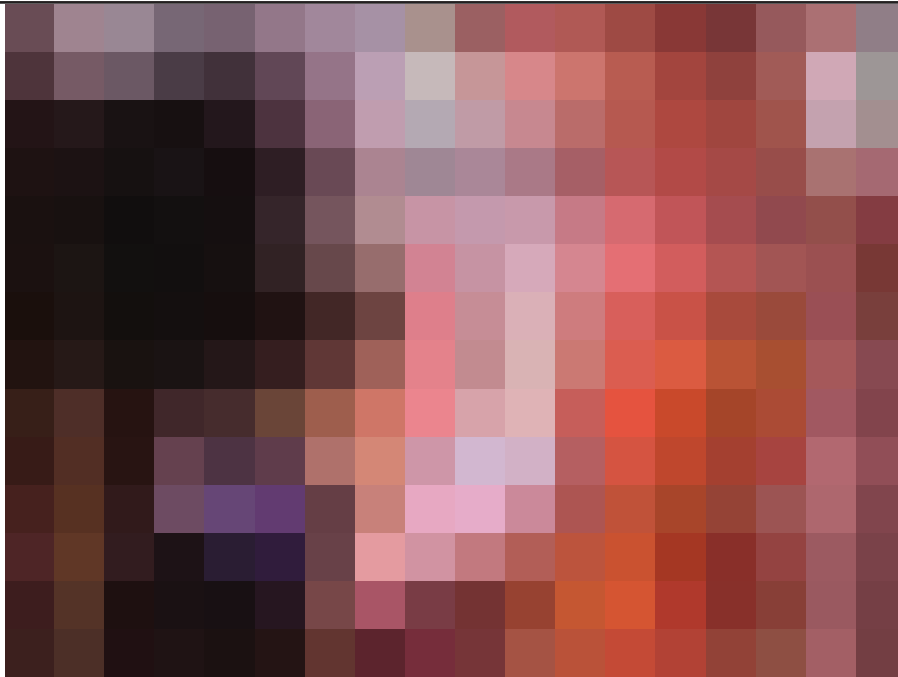


Date: 2022/12/01 **Distance:** 261.0 Ft **Obs:** Lining Feature Wrinkled



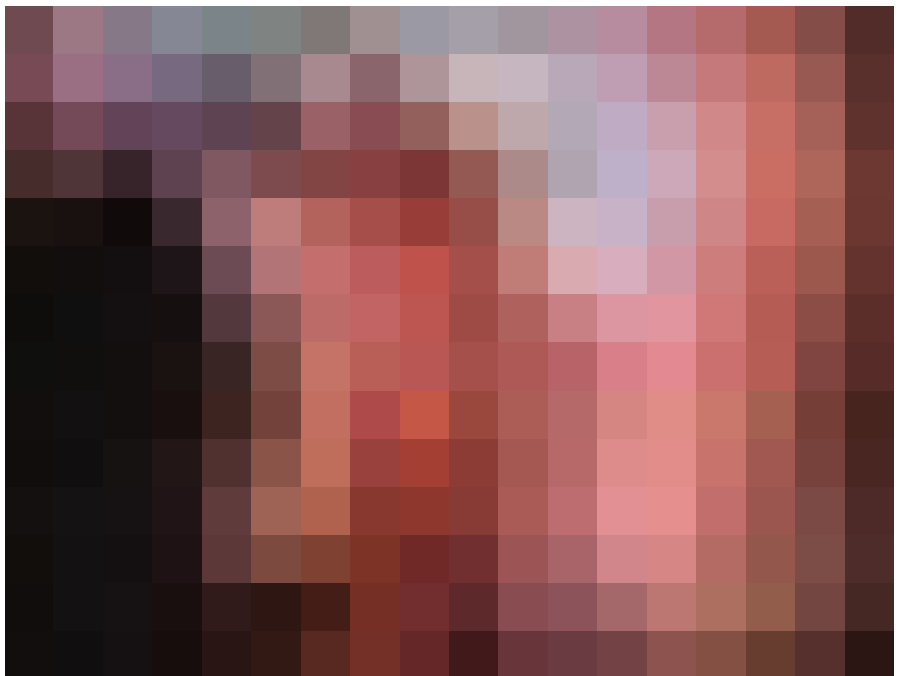
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Work Order	Surveyed On 2022/12/01	Setup 1793
Street Name 119 ORONOCO ST.	Video GREHA-12-1	
City Name ALEXANDRIA	Weather Dry - no Precipitation during survey	
Location Local rural streets with light traffic, town and city back streets		
From Manhole MH-92	To Manhole MH-93	Direction Downstream

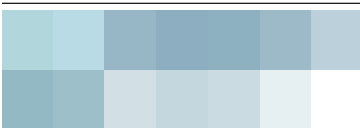


Date: 2022/12/01 **Distance:** 334.9 Ft **Obs:** Infil Weeper

Comments: AT SIDE LINE CONNECTION



Date: 2022/12/01 **Distance:** 334.9 Ft **Obs:** Infil Weeper



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Phone: 301-931-0707
Address: 11420 Old Baltimore Pike , Beltsville, MD
Fax: 301-931-0990

Tabular Report of PSR MH-92-MH-93

for **GREELEY & HANSEN LLC**

Setup	1793	Surveyed By	SMU	Certificate #	U-809-9223	Owner	CITY OF ALEXANDRIA
Reviewed By		Reviewer #		Work Order	E21-02-01		
Customer	GREELEY & HANSEN LLC			P/O #			
Media Label	GREHA-12-1	Project	OLD TOWN SOUTH				
Date	2022/12/01	Time	10:40	Weather	Dry - no Precipitation	Pre-Cleaning	N
Flow control	Not Controlled	Survey Purpose	Routine Assessment	Direction	Down		
Inspection Status	Complete Inspection	Consequence Of Failure		Pressure			
Inspection Technology Used	<input checked="" type="checkbox"/> CCTV <input type="checkbox"/> Laser <input type="checkbox"/> Sonar <input type="checkbox"/> Sidewall <input type="checkbox"/> Zoom <input type="checkbox"/> Other						

Street	119 ORONOCO ST.	City	ALEXANDRIA	Drainage area	P.I.
Location Code	Local rural streets with light traffic, town and city back streets	Pipe Use	Sanitary Sewage Pipe		
Location details	UP STREAM MANHOLE IS IN FRONT OF 119 ORONOCO ST.	Height	44	Width	72 ins
Shape	Other	Material	Not Known	Lining	Cured in Place
Coating		Pipe Joint length	Ft	Total length	335.0 Ft
Length Surveyed	335.0 Ft	Year Constructed		Year Renewed	
Up	MH-92	Rim to invert		Grade to invert	
Northing		Easting		Elevation	
Down	MH-93	Rim to invert		Grade to invert	
Northing		Easting		Elevation	
Coordinate System		Vertical Datum			
GPS Accuracy					
Additional info	SPECIAL INSPECTION MAIN TARGET IS INFILTRATION.				Structural O & M Miscellaneous Constructional

Count	Video	CD Code	Val1	Val2	%	Jnt	Fr	To	ImRef	Remarks
0.0		ST Start of Survey								
0.0		AMH Manhole								MH-92
0.0		MWL Miscellaneous Water Level			10.000					
26.7		IS Infil Stain					08			MINOR
47.7		MGO Miscellaneous General Observation								OIL VISIBLE
63.4		MGO Miscellaneous General Observation								PETROLIUM PRODUCT IN WATER
187.3		TBI Tap Break-in Intruding	15.000	12.000			03			15" STORM TIE-IN
187.3		IW Infil Weeper					03			AT CONNECTION
261.0		LFW Lining Feature Wrinkled					04			5% OR LESS WRINKLE
334.9		IW Infil Weeper					09			AT SIDE LINE CONNECTION
335.0		AMH Manhole								MH-93
335.0		FH End of Survey								OIL PRODUCT VISIBLE IN PIPE

335.0 Ft Total Length Surveyed

Scores	Structural:	Pipe Rating	3	Pipe Ratings Index	3	Quick Rating	3100
	O&M:	Pipe Rating	9	Pipe Ratings Index	2.3	Quick Rating	4122
	Overall	Pipe Rating	12	Pipe Ratings Index	2.4	Quick Rating	4131

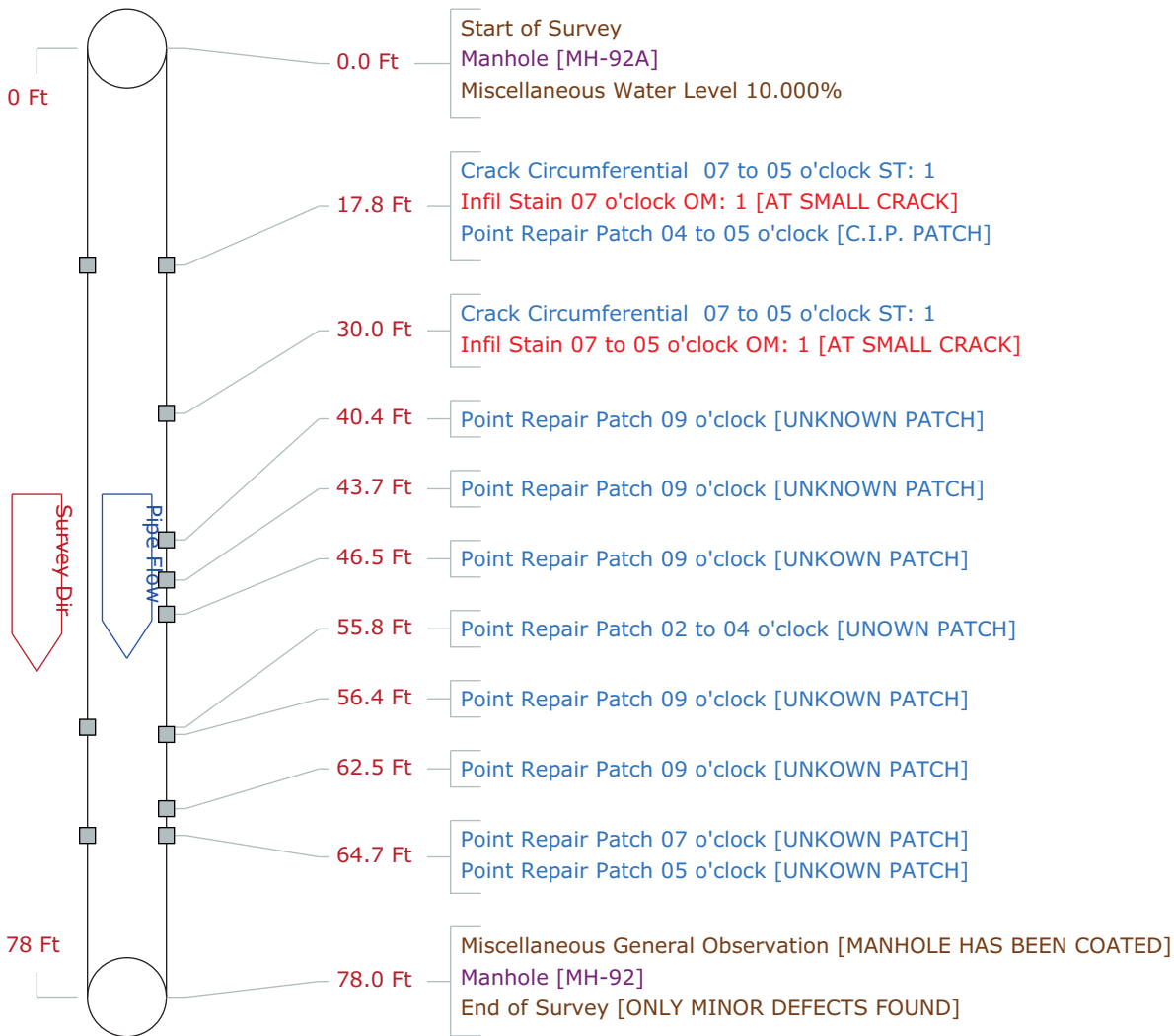


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 Fax:301-931-0990

Pipe Graphic Report of PLR MH-92A-MH-92

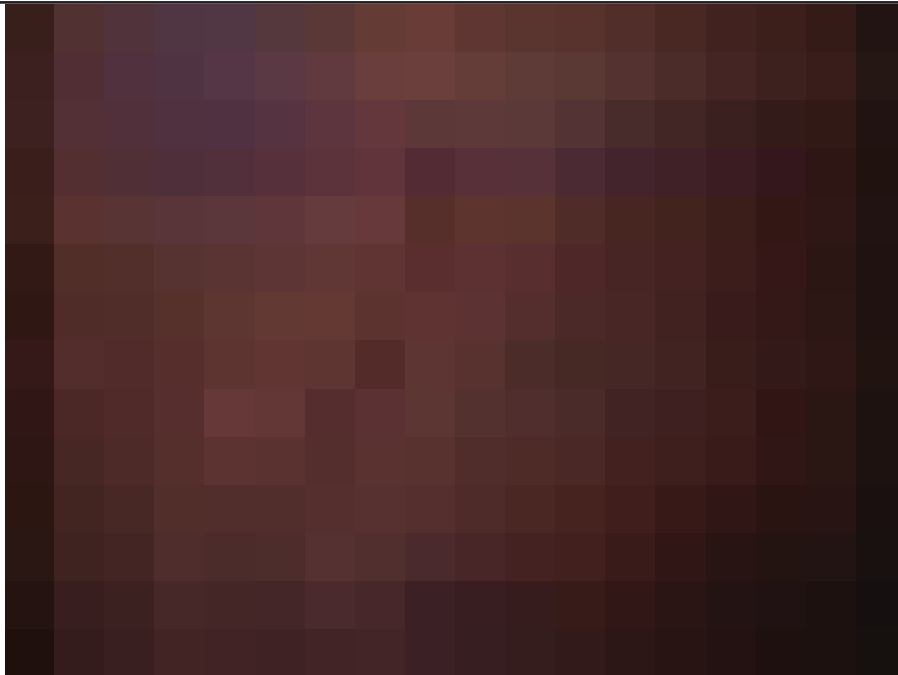
for **GREELEY & HANSEN LLC**

Setup 1792	Surveyed By SMU	Certificate # U-809-9223	Owner CITY OF ALEXANDRIA				
Reviewed By	Reviewer #	Work Order E21-02-01					
Customer GREELEY & HANSEN LLC		P/O #					
Media Label GREHA-12-1	Project OLD TOWN SOUTH						
Date 2022/12/01	Time 10:15	Weather Dry - no Precipitation	Pre-Cleaning N				
Flow control Not Controlled	Survey Purpose Routine Assessment		Date Cleaned				
Street 119 ORONOCO ST.	City ALEXANDRIA	Drainage area P.I.					
Location Code Local rural streets with light traffic, town and city back streets		Pipe Use Sanitary Sewage Pipe					
Location details UP STREAM MANHOLE IS IN ORONOCO ST. AT N. LEE ST.	Height 44	Width 72 ins					
Shape Other	Material Not Known	Lining Spray Liner					
Coating	Pipe Joint length Ft	Total length 78.0	Ft				
Length Surveyed 78.00	Year Constructed	Year Renewed	<table border="1"> <tr> <td>Structural</td> <td>O & M</td> </tr> <tr> <td>Miscellaneous</td> <td>Constructional</td> </tr> </table>	Structural	O & M	Miscellaneous	Constructional
Structural	O & M						
Miscellaneous	Constructional						
Additional info SPECIAL INSPECTION MAIN TARGET IS INFILTRATION.							
Up MH-92A	Rim to invert 15.00	Grade to invert	Rim to grade Ft				
Down MH-92	Rim to invert	Grade to invert	Rim to grade Ft				



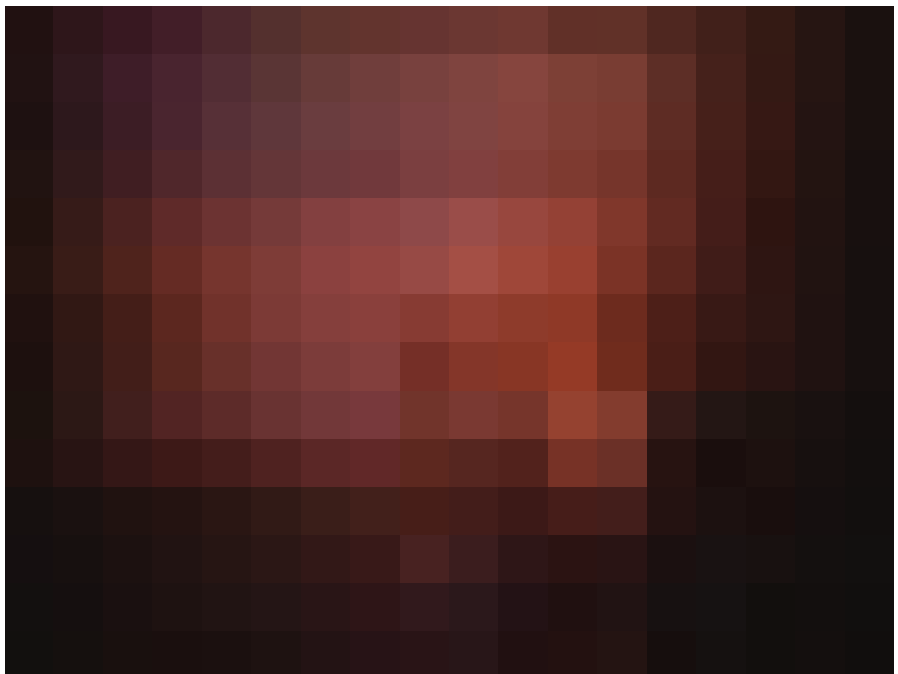
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 Fax: 301-931-0990

Work Order	Surveyed On 2022/12/01	Setup 1792
Street Name 119 ORONOCO ST.	Video GREHA-12-1	
City Name ALEXANDRIA	Weather Dry - no Precipitation during survey	
Location Local rural streets with light traffic, town and city back streets		
From Manhole MH-92A	To Manhole MH-92	Direction Downstream



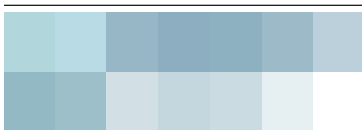
Date: 2022/12/01 **Distance:** 17.8 Ft **Obs:** Crack Circumferential

Comments:



Date: 2022/12/01 **Distance:** 17.8 Ft **Obs:** Infil Stain

Comments: AT SMALL CRACK

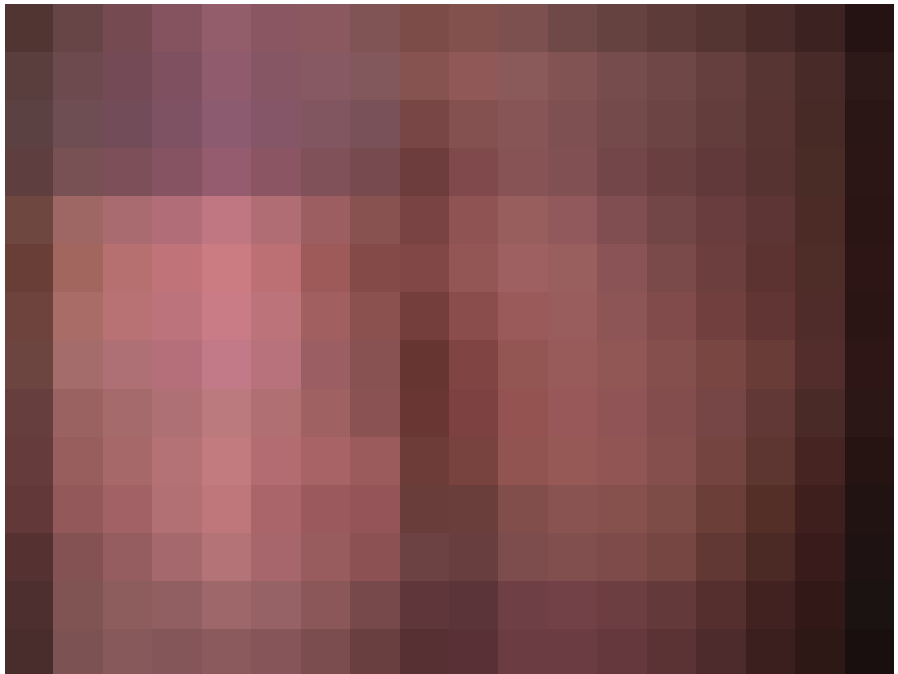


Work Order	Surveyed On 2022/12/01	Setup 1792
Street Name 119 ORONOCO ST.	Video GREHA-12-1	
City Name ALEXANDRIA	Weather Dry - no Precipitation during survey	
Location Local rural streets with light traffic, town and city back streets		
From Manhole MH-92A	To Manhole MH-92	Direction Downstream

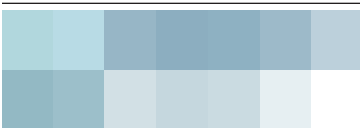


Date: 2022/12/01 **Distance:** 17.8 Ft **Obs:** Point Repair Patch

Comments: C.I.P. PATCH

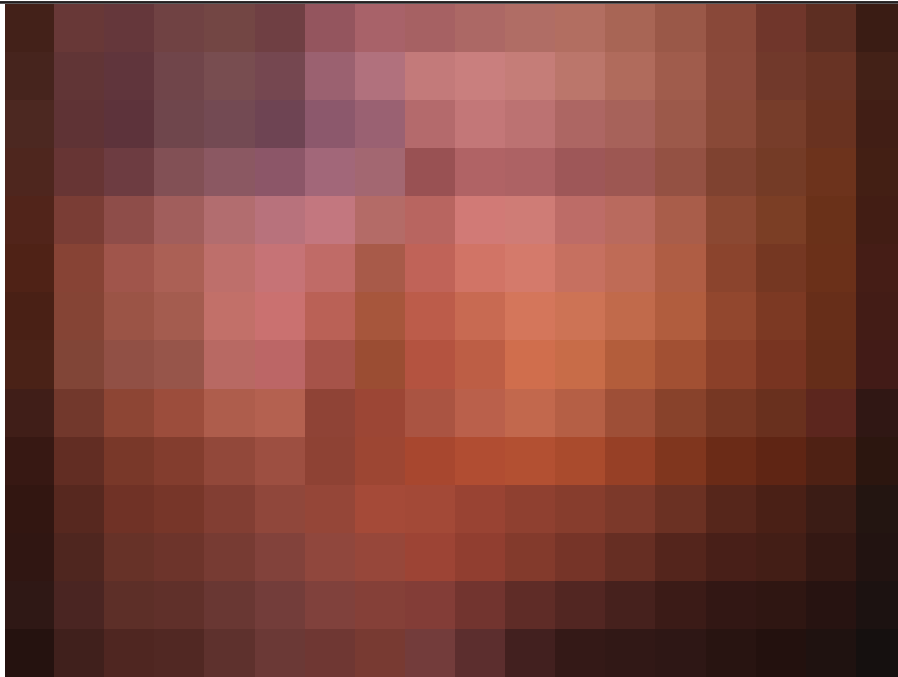


Date: 2022/12/01 **Distance:** 30.0 Ft **Obs:** Crack Circumferential



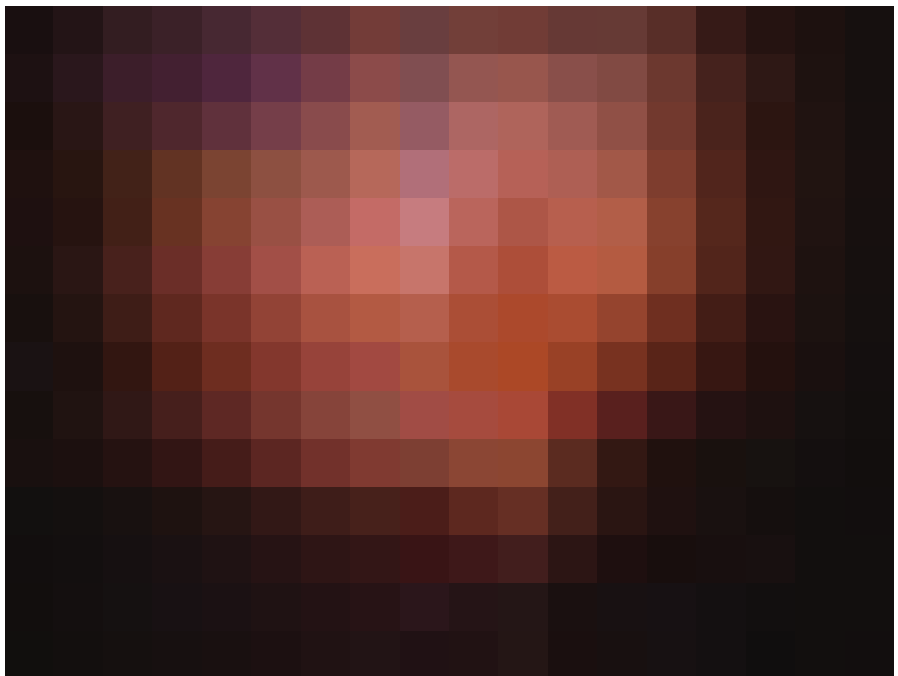
Mobile Dredging & Video Pipe, Inc.
Phone: 301-931-0707
Address: 11420 Old Baltimore Pike , Beltsville, MD
Fax: 301-931-0990

Work Order	Surveyed On 2022/12/01	Setup 1792
Street Name 119 ORONOCO ST.	Video GREHA-12-1	
City Name ALEXANDRIA	Weather Dry - no Precipitation during survey	
Location Local rural streets with light traffic, town and city back streets		
From Manhole MH-92A	To Manhole MH-92	Direction Downstream

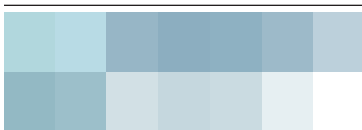


Date: 2022/12/01 **Distance:** 30.0 Ft **Obs:** Crack Circumferential

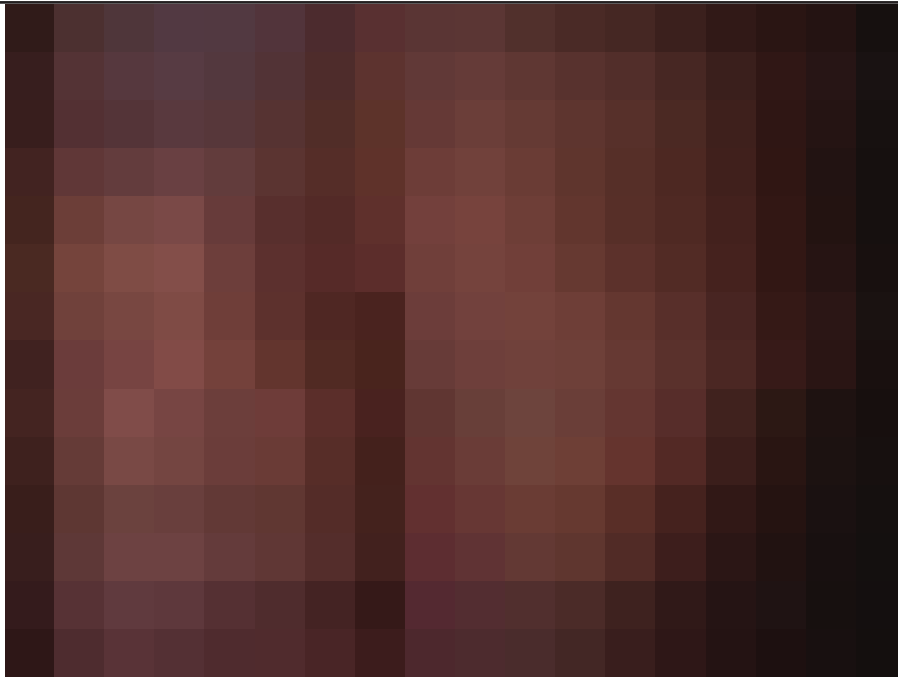
Comments:



Date: 2022/12/01 **Distance:** 30.0 Ft **Obs:** Infil Stain

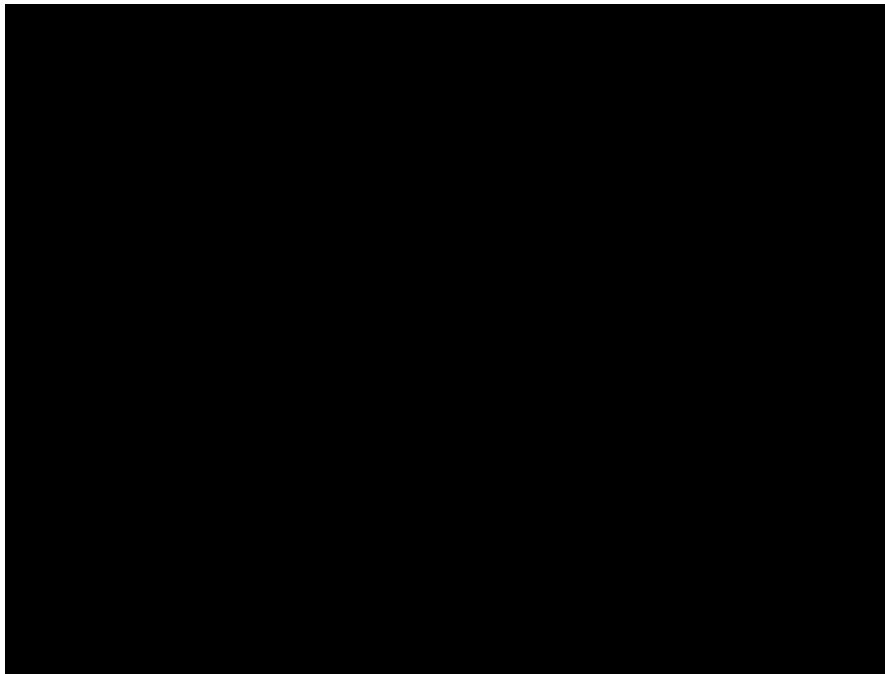


Work Order	Surveyed On 2022/12/01	Setup 1792
Street Name 119 ORONOCO ST.	Video GREHA-12-1	
City Name ALEXANDRIA	Weather Dry - no Precipitation during survey	
Location Local rural streets with light traffic, town and city back streets		
From Manhole MH-92A	To Manhole MH-92	Direction Downstream

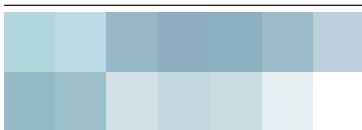


Date: 2022/12/01 **Distance:** 30.0 Ft **Obs:** Infil Stain

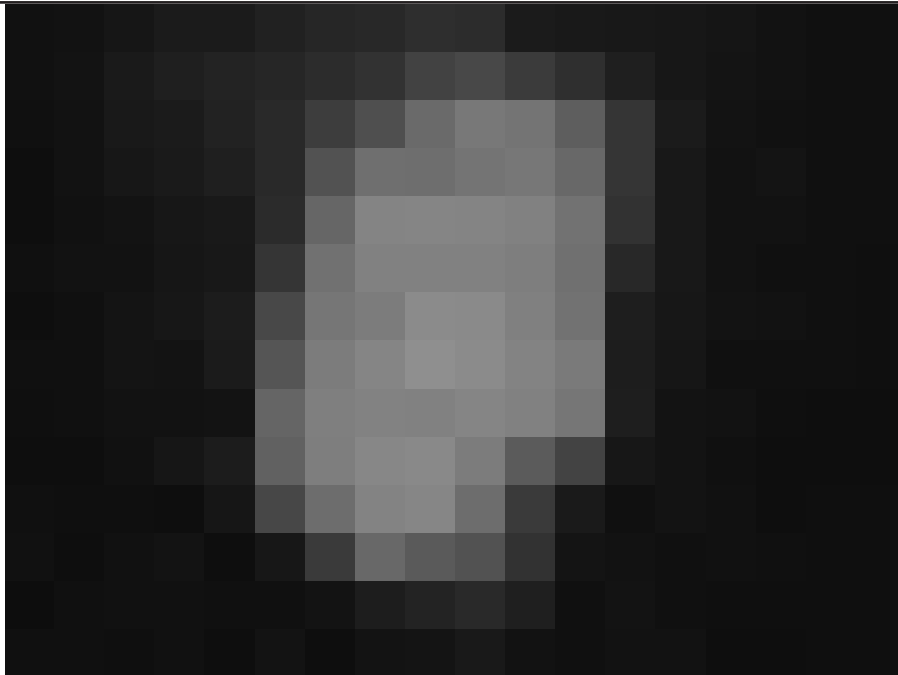
Comments: AT SMALL CRACK



Date: 2022/12/01 **Distance:** 40.4 Ft **Obs:** Point Repair Patch

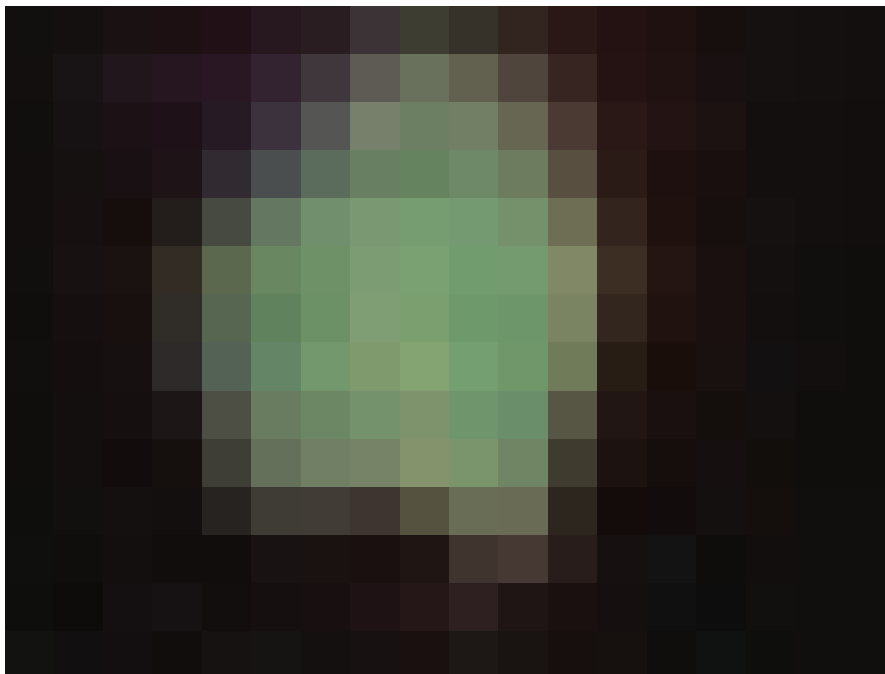


Work Order	Surveyed On 2022/12/01	Setup 1792
Street Name 119 ORONOCO ST.	Video GREHA-12-1	
City Name ALEXANDRIA	Weather Dry - no Precipitation during survey	
Location Local rural streets with light traffic, town and city back streets		
From Manhole MH-92A	To Manhole MH-92	Direction Downstream

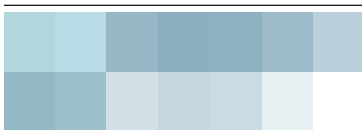


Date: 2022/12/01 **Distance:** 43.7 Ft **Obs:** Point Repair Patch

Comments: UNKNOWN PATCH

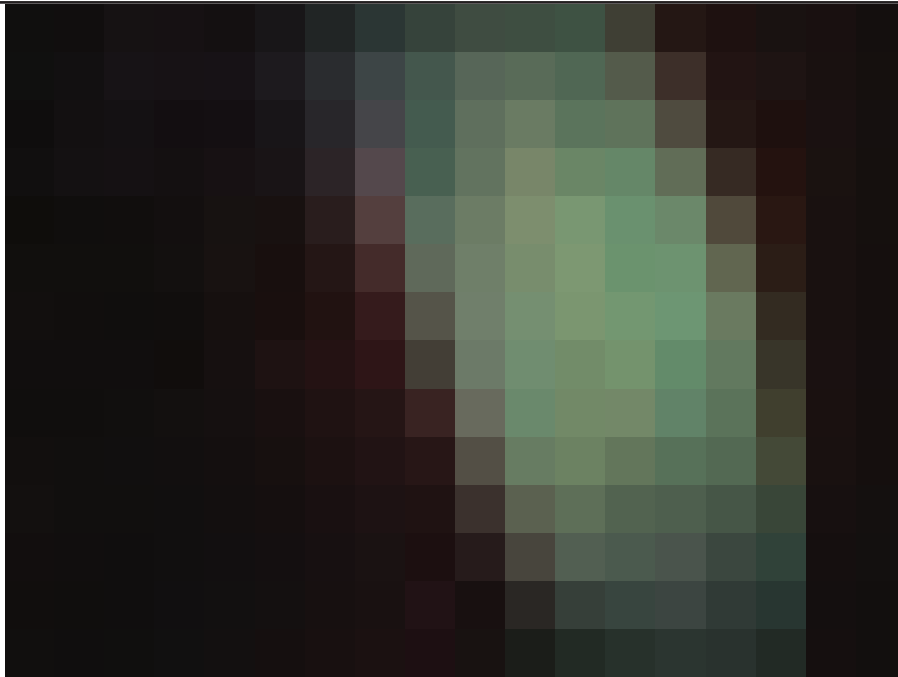


Date: 2022/12/01 **Distance:** 46.5 Ft **Obs:** Point Repair Patch



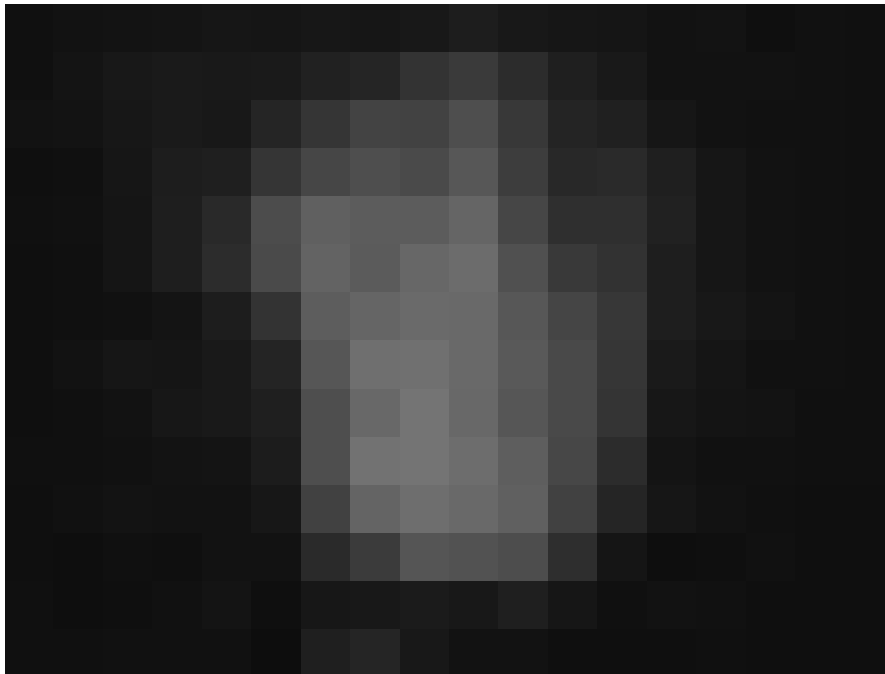
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Fax: 301-931-0990

Work Order	Surveyed On 2022/12/01	Setup 1792
Street Name 119 ORONOCO ST.	Video GREHA-12-1	
City Name ALEXANDRIA	Weather Dry - no Precipitation during survey	
Location Local rural streets with light traffic, town and city back streets		
From Manhole MH-92A	To Manhole MH-92	Direction Downstream

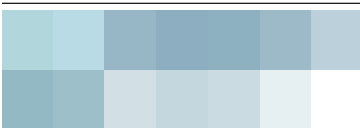


Date: 2022/12/01 **Distance:** 55.8 Ft **Obs:** Point Repair Patch

Comments: UNOWN PATCH

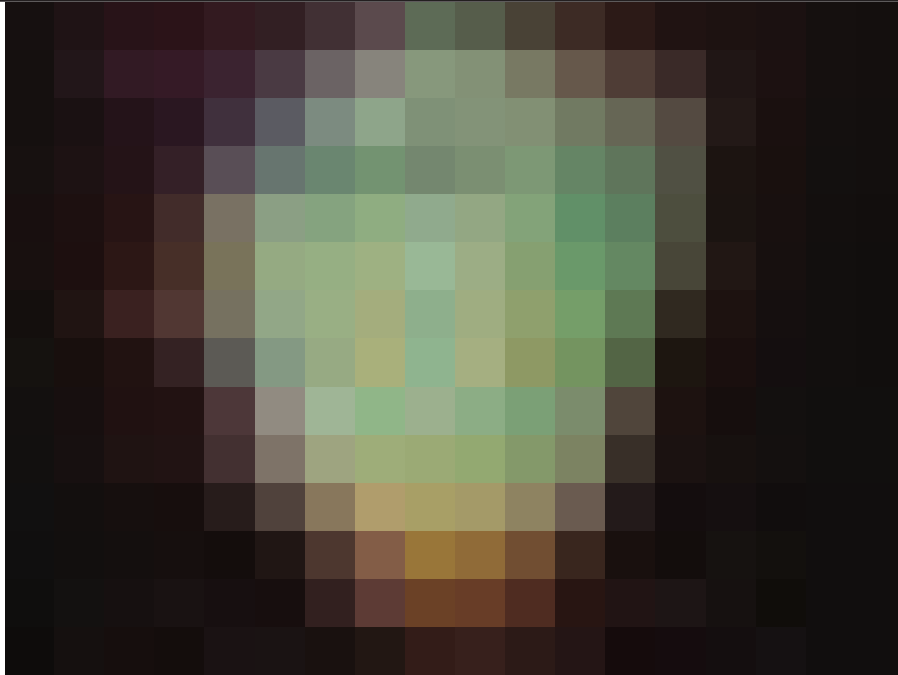


Date: 2022/12/01 **Distance:** 56.4 Ft **Obs:** Point Repair Patch



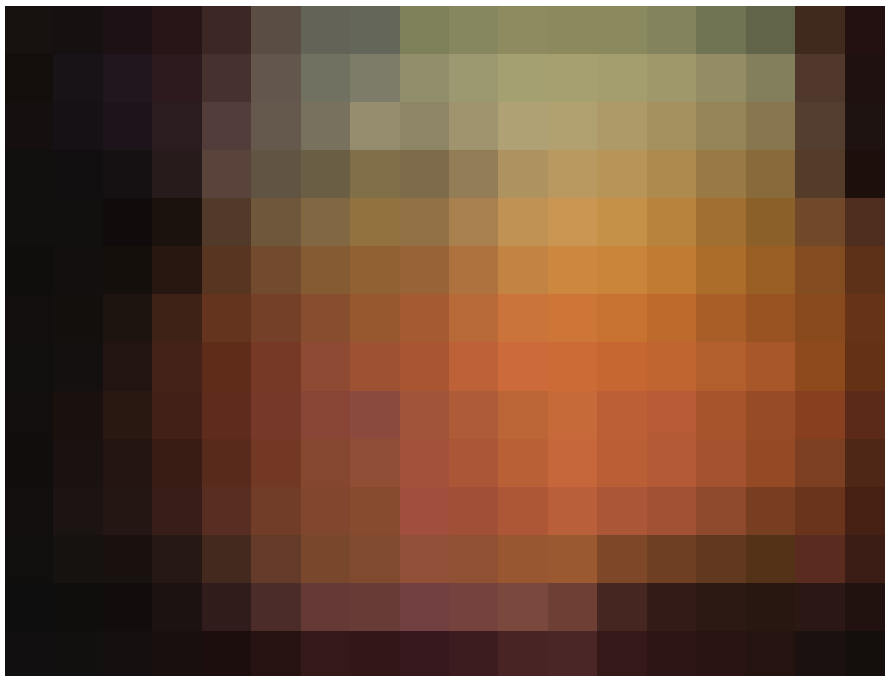
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Work Order	Surveyed On 2022/12/01	Setup 1792
Street Name 119 ORONOCO ST.	Video GREHA-12-1	
City Name ALEXANDRIA	Weather Dry - no Precipitation during survey	
Location Local rural streets with light traffic, town and city back streets		
From Manhole MH-92A	To Manhole MH-92	Direction Downstream

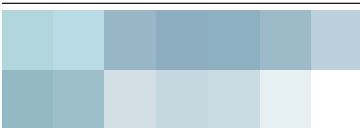


Date: 2022/12/01 **Distance:** 62.5 Ft **Obs:** Point Repair Patch

Comments: UNKOWN PATCH



Date: 2022/12/01 **Distance:** 64.7 Ft **Obs:** Point Repair Patch



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Tabular Report of PSR MH-92A-MH-92

for **GREELEY & HANSEN LLC**

Setup	1792	Surveyed By	SMU	Certificate #	U-809-9223	Owner	CITY OF ALEXANDRIA
Reviewed By		Reviewer #		Work Order	E21-02-01		
Customer	GREELEY & HANSEN LLC			P/O #			
Media Label	GREHA-12-1	Project	OLD TOWN SOUTH				
Date	2022/12/01	Time	10:15	Weather	Dry - no Precipitation	Pre-Cleaning	N
Flow control	Not Controlled	Survey Purpose	Routine Assessment			Direction	Down
Inspection Status	Complete Inspection	Consequence Of Failure		Pressure			
Inspection Technology Used	<input checked="" type="checkbox"/> CCTV <input type="checkbox"/> Laser <input type="checkbox"/> Sonar <input type="checkbox"/> Sidewall <input type="checkbox"/> Zoom <input type="checkbox"/> Other						

Street	119 ORONOCO ST.		City	ALEXANDRIA	Drainage area	P.I.
Location Code	Local rural streets with light traffic, town and city back streets			Pipe Use	Sanitary Sewage Pipe	
Location details	UP STREAM MANHOLE IS IN ORONOCO ST. AT N. LEE ST.			Height	44	Width 72 ins
Shape	Other	Material	Not Known		Lining	Spray Liner
Coating		Pipe Joint length	Ft	Total length	78.0	Ft
Length Surveyed	78.0	Year Constructed		Year Renewed		
Up	MH-92A	Rim to invert	15.00	Grade to invert		Rim to grade Ft
Northing		Easting		Elevation		
Down	MH-92	Rim to invert		Grade to invert		Rim to grade Ft
Northing		Easting		Elevation		
Coordinate System		Vertical Datum				
GPS Accuracy						
Additional info	SPECIAL INSPECTION MAIN TARGET IS INFILTRATION.			Structural	O & M	
				Miscellaneous	Constructional	

Count	Video	CD Code	Val1	Val2	%	Jnt	Fr	To	ImRef	Remarks
0.0		ST Start of Survey								
0.0		AMH Manhole								MH-92A
0.0		MWL Miscellaneous Water Level			10.000					
17.8		CC Crack Circumferential					07	05		
17.8		IS Infil Stain					07			AT SMALL CRACK
17.8		RPP Point Repair Patch					04	05		C.I.P. PATCH
30.0		CC Crack Circumferential					07	05		
30.0		IS Infil Stain					07	05		AT SMALL CRACK
40.4		RPP Point Repair Patch					09			UNKNOWN PATCH
43.7		RPP Point Repair Patch					09			UNKNOWN PATCH
46.5		RPP Point Repair Patch					09			UNKOWN PATCH
55.8		RPP Point Repair Patch					02	04		UNOWN PATCH
56.4		RPP Point Repair Patch					09			UNKOWN PATCH
62.5		RPP Point Repair Patch					09			UNKOWN PATCH
64.7		RPP Point Repair Patch					07			UNKOWN PATCH
64.7		RPP Point Repair Patch					05			UNKOWN PATCH
78.0		MGO Miscellaneous General Observation								MANHOLE HAS BEEN COATED
78.0		AMH Manhole								MH-92
78.0		FH End of Survey								ONLY MINOR DEFECTS FOUND

78.0 Ft Total Length Surveyed



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Tabular Report of PSR MH-92A-MH-92

for GREELEY & HANSEN LLC

Setup 1792 **Date** 2022/12/01 **Time** 10:15 **Up** MH-92A **Down** MH-92

Scores

Structural:	Pipe Rating 2	Pipe Ratings Index 1	Quick Rating 1200
O&M:	Pipe Rating 2	Pipe Ratings Index 1	Quick Rating 1200
Overall	Pipe Rating 4	Pipe Ratings Index 1.0	Quick Rating 1400

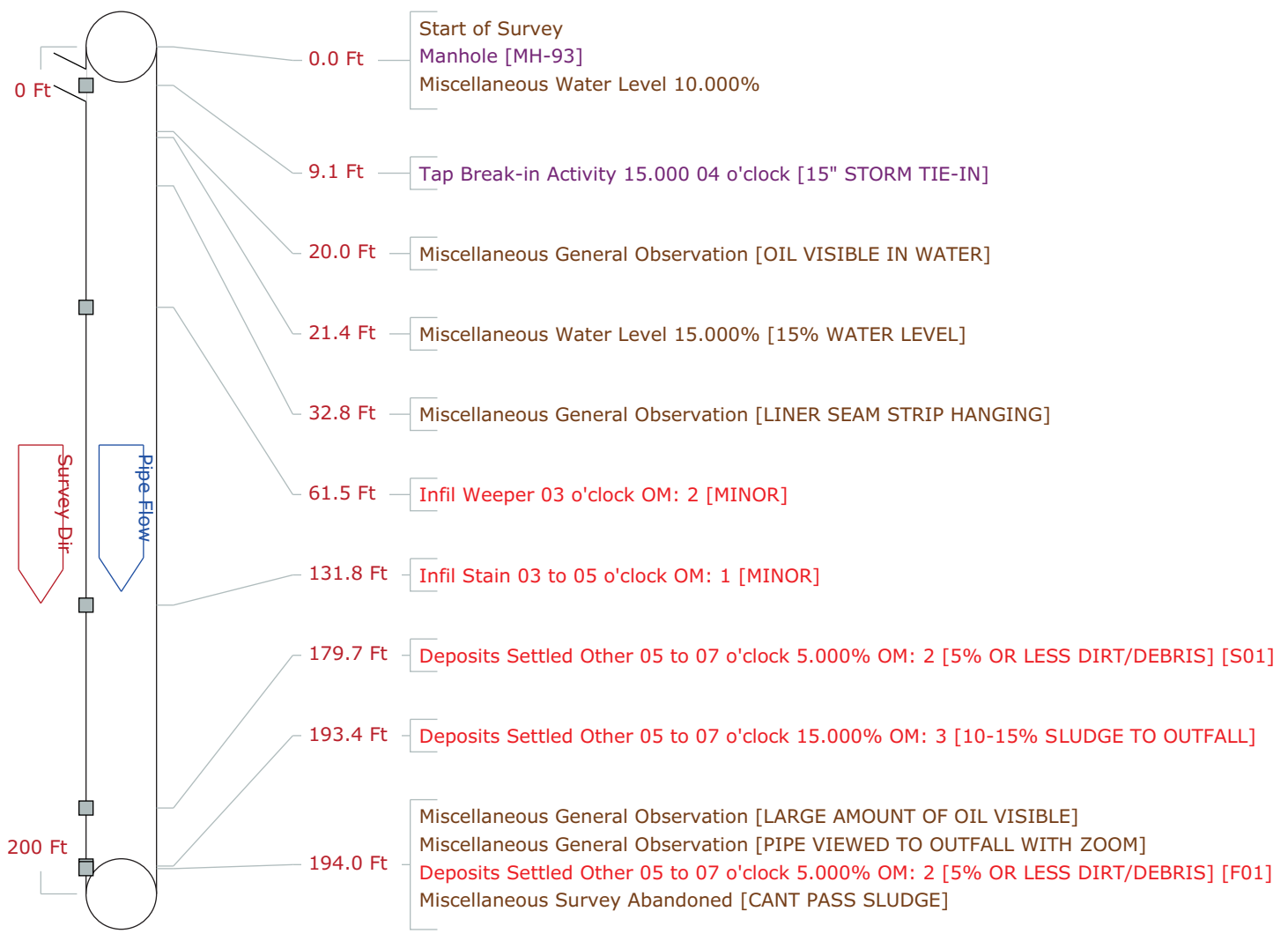


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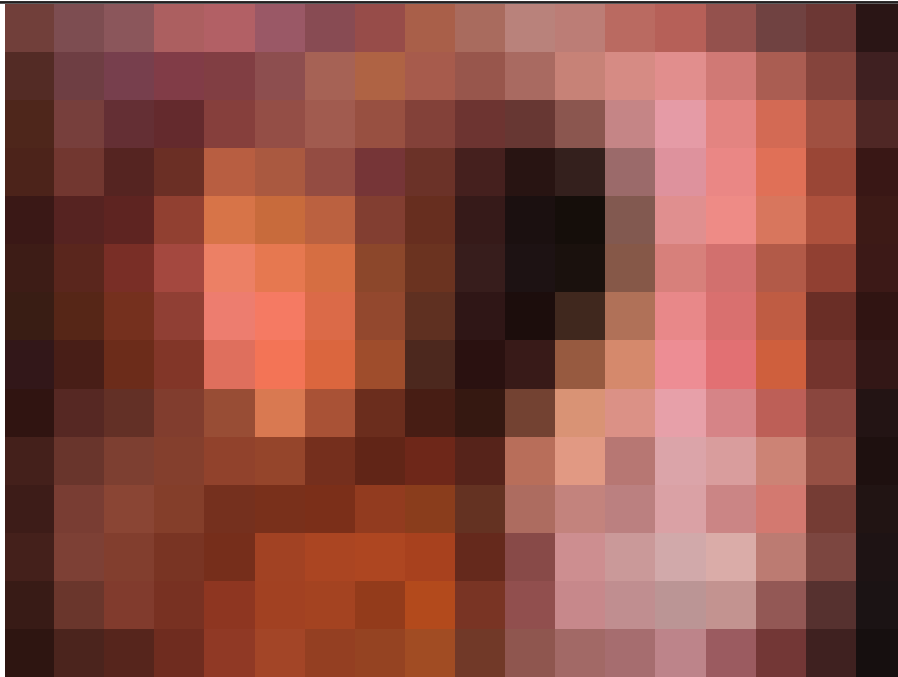
Pipe Graphic Report of PLR MH-93-OUTFALL

for **GREELEY & HANSEN LLC**

Setup 1794	Surveyed By SMU	Certificate # U-809-9223	Owner CITY OF ALEXANDRIA				
Reviewed By	Reviewer #	Work Order E21-02-01					
Customer GREELEY & HANSEN LLC		P/O #					
Media Label GREHA-12-1	Project OLD TOWN SOUTH						
Date 2022/12/01	Time 11:49	Weather Dry - no Precipitation	Pre-Cleaning N				
Flow control Not Controlled	Survey Purpose Routine Assessment		Date Cleaned				
Street 1 ORONOCO ST.	City ALEXANDRIA	Drainage area P.I.					
Location Code Local rural streets with light traffic, town and city back streets		Pipe Use Sanitary Sewage Pipe					
Location details UP STREAM MANHOLE IS IN ORONOCO ST. AT N. UNION ST.	Height 44	Width 72 ins					
Shape Other	Material Not Known	Lining Cured in Place					
Coating	Pipe Joint length Ft	Total length 200.0 Ft	<table border="1"> <tr> <td>Structural</td> <td>O & M</td> </tr> <tr> <td>Miscellaneous</td> <td>Constructional</td> </tr> </table>	Structural	O & M	Miscellaneous	Constructional
Structural	O & M						
Miscellaneous	Constructional						
Length Surveyed 194.00 Ft	Year Constructed	Year Renewed					
Additional info SPECIAL INSPECTION MAIN TARGET IS INFILTRATION.							
Up MH-93	Rim to invert	Grade to invert	Rim to grade Ft				
Down OUTFALL	Rim to invert	Grade to invert	Rim to grade Ft				

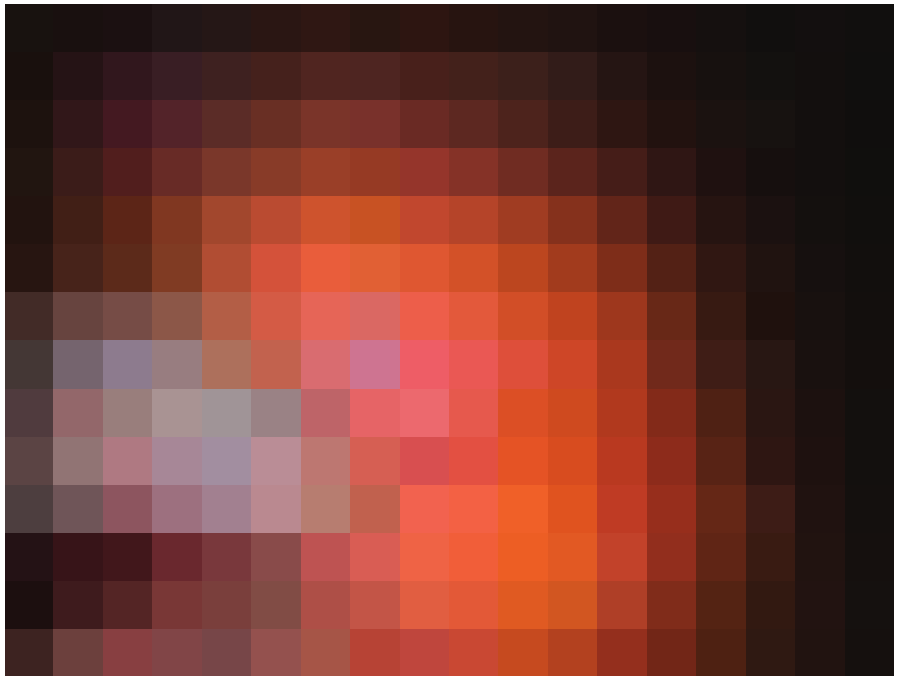


Work Order	Surveyed On 2022/12/01	Setup 1794
Street Name 1 ORONOCO ST.	Video GREHA-12-1	
City Name ALEXANDRIA	Weather Dry - no Precipitation during survey	
Location Local rural streets with light traffic, town and city back streets		
From Manhole MH-93	To Manhole OUTFALL	Direction Downstream



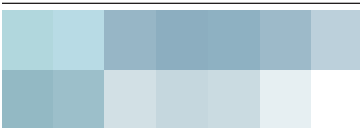
Date: 2022/12/01 **Distance:** 9.1 Ft **Obs:** Tap Break-in Activity

Comments: 15" STORM TIE-IN



Date: 2022/12/01 **Distance:** 20.0 Ft **Obs:** Miscellaneous General Observation

Comments: OIL VISIBLE IN WATER

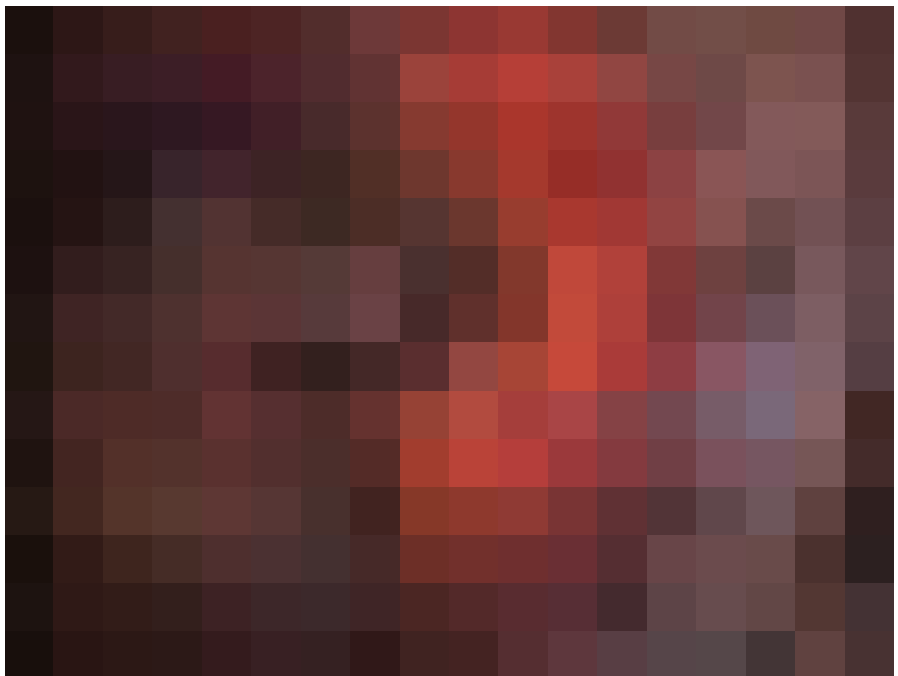


Work Order	Surveyed On 2022/12/01	Setup 1794
Street Name 1 ORONOCO ST.	Video GREHA-12-1	
City Name ALEXANDRIA	Weather Dry - no Precipitation during survey	
Location Local rural streets with light traffic, town and city back streets		
From Manhole MH-93	To Manhole OUTFALL	Direction Downstream

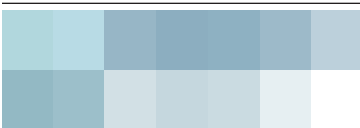


Date: 2022/12/01 **Distance:** 32.8 Ft **Obs:** Miscellaneous General Observation

Comments: LINER SEAM STRIP HANGING

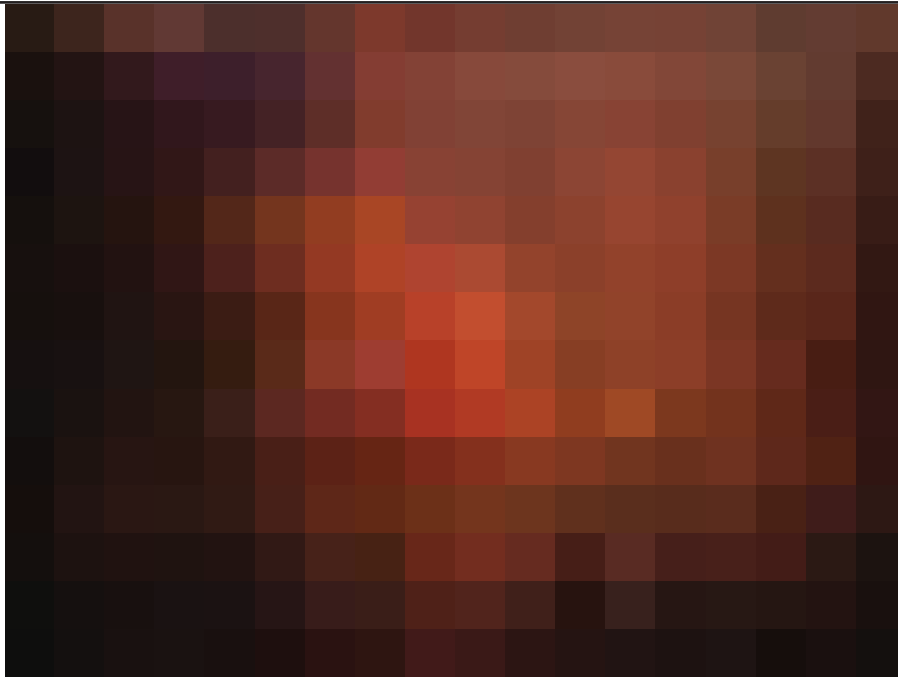


Date: 2022/12/01 **Distance:** 61.5 Ft **Obs:** Infil Weeper



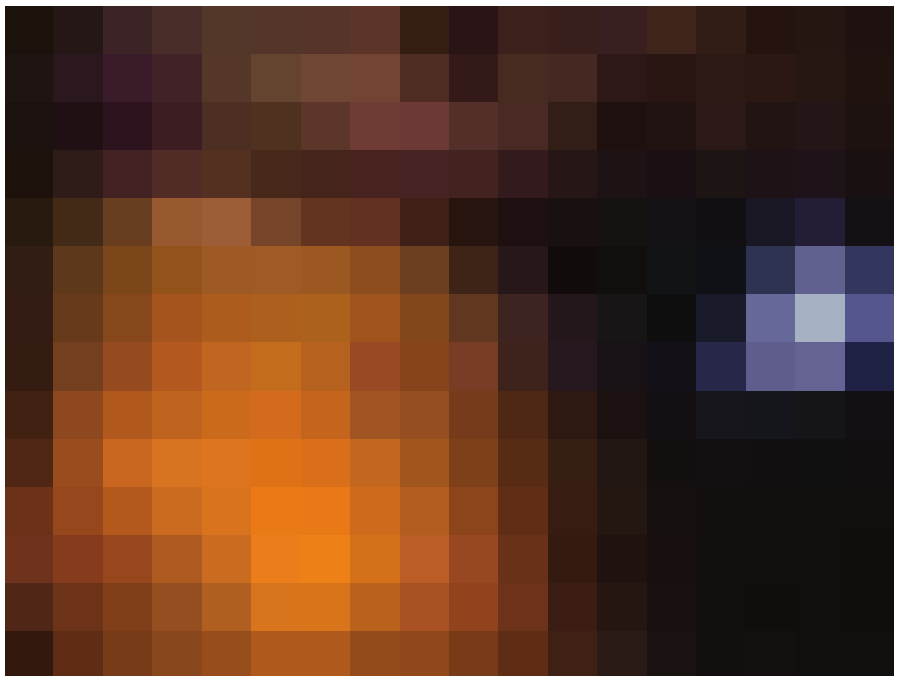
Mobile Dredging & Video Pipe, Inc.
Phone: 301-931-0707
Address: 11420 Old Baltimore Pike , Beltsville, MD
Fax: 301-931-0990

Work Order	Surveyed On 2022/12/01	Setup 1794
Street Name 1 ORONOCO ST.	Video GREHA-12-1	
City Name ALEXANDRIA	Weather Dry - no Precipitation during survey	
Location Local rural streets with light traffic, town and city back streets		
From Manhole MH-93	To Manhole OUTFALL	Direction Downstream

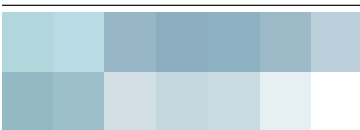


Date: 2022/12/01 **Distance:** 131.8 Ft **Obs:** Infil Stain

Comments: MINOR

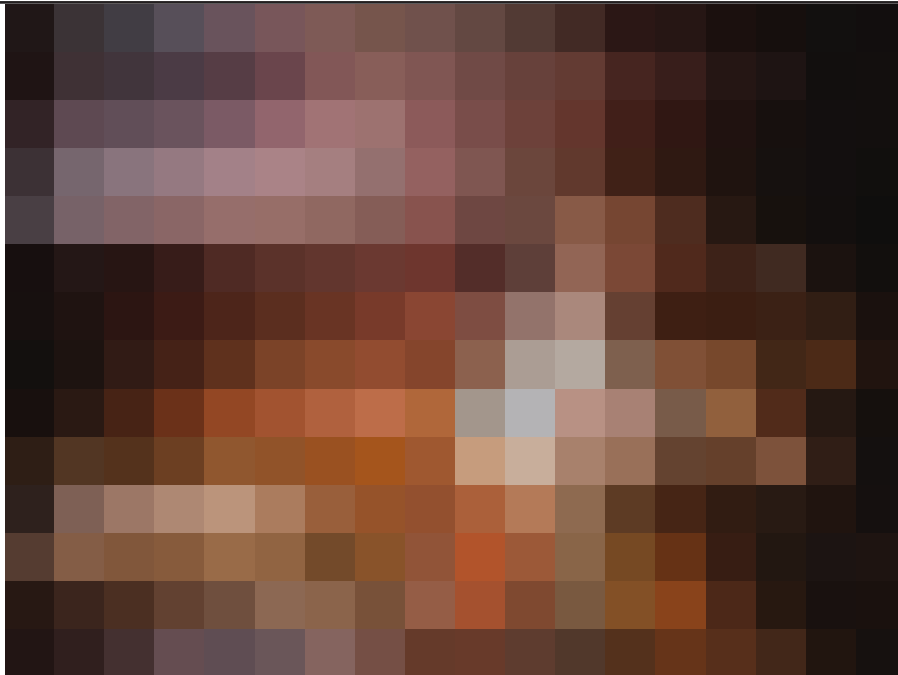


Date: 2022/12/01 **Distance:** 179.7 Ft **Obs:** Deposits Settled Other



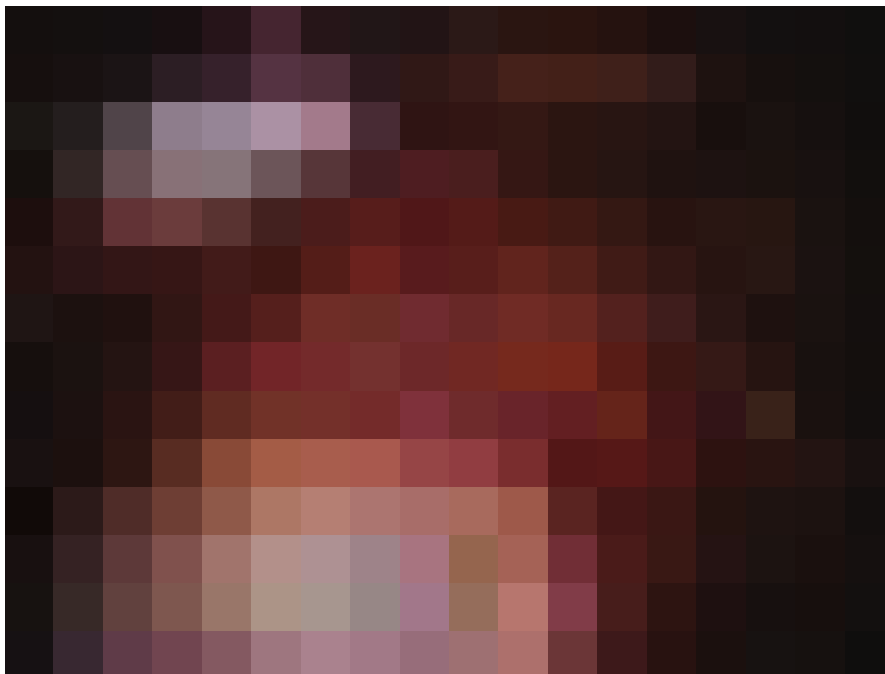
Mobile Dredging & Video Pipe, Inc.
Phone: 301-931-0707
Address: 11420 Old Baltimore Pike , Beltsville, MD
Fax: 301-931-0990

Work Order	Surveyed On 2022/12/01	Setup 1794
Street Name 1 ORONOCO ST.	Video GREHA-12-1	
City Name ALEXANDRIA	Weather Dry - no Precipitation during survey	
Location Local rural streets with light traffic, town and city back streets		
From Manhole MH-93	To Manhole OUTFALL	Direction Downstream

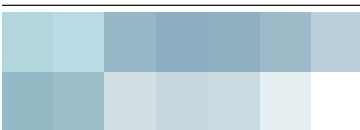


Date: 2022/12/01 **Distance:** 193.4 Ft **Obs:** Deposits Settled Other

Comments: 10-15% SLUDGE TO OUTFALL

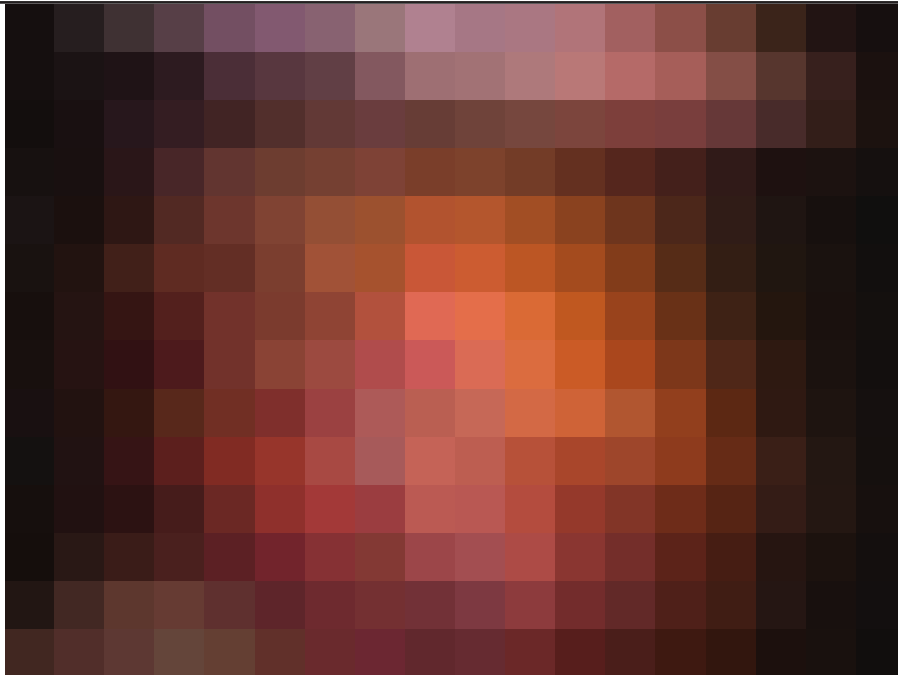


Date: 2022/12/01 **Distance:** 194.0 Ft **Obs:** Miscellaneous General Observation

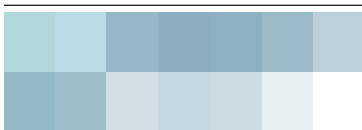


Mobile Dredging & Video Pipe, Inc.
Phone: 301-931-0707
Address: 11420 Old Baltimore Pike , Beltsville, MD
Fax: 301-931-0990

Work Order	Surveyed On 2022/12/01	Setup 1794
Street Name 1 ORONOCO ST.	Video GREHA-12-1	
City Name ALEXANDRIA	Weather Dry - no Precipitation during survey	
Location Local rural streets with light traffic, town and city back streets		
From Manhole MH-93	To Manhole OUTFALL	Direction Downstream



Date: 2022/12/01 **Distance:** 194.0 Ft **Obs:** Miscellaneous General Observation
Comments: LARGE AMOUNT OF OIL VISIBLE



Tabular Report of PSR MH-93-OUTFALL

for **GREELEY & HANSEN LLC**

Setup	1794	Surveyed By	SMU	Certificate #	U-809-9223	Owner	CITY OF ALEXANDRIA
Reviewed By		Reviewer #		Work Order	E21-02-01		
Customer	GREELEY & HANSEN LLC			P/O #			
Media Label	GREHA-12-1	Project	OLD TOWN SOUTH				
Date	2022/12/01	Time	11:49	Weather	Dry - no Precipitation	Pre-Cleaning	N
Flow control	Not Controlled	Survey Purpose	Routine Assessment			Direction	Down
Inspection Status	Complete Inspection	Consequence Of Failure				Pressure	
Inspection Technology Used	<input checked="" type="checkbox"/> CCTV <input type="checkbox"/> Laser <input type="checkbox"/> Sonar <input type="checkbox"/> Sidewall <input type="checkbox"/> Zoom <input type="checkbox"/> Other						

Street	1 ORONOCO ST.		City	ALEXANDRIA	Drainage area	P.I.
Location Code	Local rural streets with light traffic, town and city back streets			Pipe Use	Sanitary Sewage Pipe	
Location details	UP STREAM MANHOLE IS IN ORONOCO ST. AT N. UNION ST.			Height	44	Width 72 ins
Shape	Other	Material	Not Known		Lining	Cured in Place
Coating		Pipe Joint length	Ft	Total length	200.0	Ft
Length Surveyed	194.0	Year Constructed		Year Renewed		
Up	MH-93	Rim to invert		Grade to invert		Rim to grade Ft
Northing		Easting		Elevation		
Down	OUTFALL	Rim to invert		Grade to invert		Rim to grade Ft
Northing		Easting		Elevation		
Coordinate System				Vertical Datum		
GPS Accuracy				Structural	O & M	
Additional info	SPECIAL INSPECTION MAIN TARGET IS INFILTRATION.			Miscellaneous	Constructional	

Count	Video	CD Code	Val1	Val2	%	Jnt	Fr	To	ImRef	Remarks
0.0		ST	Start of Survey							
0.0		AMH	Manhole							MH-93
0.0		MWL	Miscellaneous Water Level		10.000					
9.1		TBA	Tap Break-in Activity		15.000		04			15" STORM TIE-IN
20.0		MGO	Miscellaneous General Observation							OIL VISIBLE IN WATER
21.4		MWL	Miscellaneous Water Level		15.000					15% WATER LEVEL
32.8		MGO	Miscellaneous General Observation							LINER SEAM STRIP HANGING
61.5		IW	Infil Weeper				03			MINOR
131.8		IS	Infil Stain				03	05		MINOR
179.7		S01	DSZ Deposits Settled Other		5.000		05	07		5% OR LESS DIRT/DEBRIS
193.4			DSZ Deposits Settled Other		15.000		05	07		10-15% SLUDGE TO OUTFALL
194.0			MGO Miscellaneous General Observation							LARGE AMOUNT OF OIL VISIBLE
194.0			MGO Miscellaneous General Observation							PIPE VIEWED TO OUTFALL WITH
194.0		F01	DSZ Deposits Settled Other		5.000		05	07		5% OR LESS DIRT/DEBRIS
194.0		MSA	Miscellaneous Survey Abandoned							CANT PASS SLUDGE

194.0 Ft Total Length Surveyed

Scores	Structural:	Pipe Rating	0	Pipe Ratings Index	0	Quick Rating	0000
	O&M:	Pipe Rating	12	Pipe Ratings Index	2	Quick Rating	3124
	Overall	Pipe Rating	12	Pipe Ratings Index	2.0	Quick Rating	3124

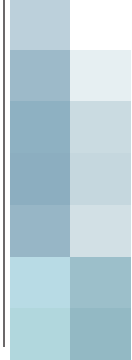
Mobile Dredging & Video Pipe, Inc.
 Phone:301-931-0707
 Address: 11420 Old Baltimore Pike , Beltsville, MD
 Fax:301-931-0990

CCTV Defect Scores report for O and M

Client GREELEY & HANSEN LLC **Project Start** 12/13/2021
Project Old Town South E21-02-01
Location
Database Y:\2022 DELIVERABLES FILES\GREELEY & HANSEN\GREEHA-20\OPERATOR DOWNLOADS\DECEMBER\WEEK 01/03/2023

Setup	PLR	Length	Defects	Pipe Rating	Quick Rating	Mean Pipe Score	Pipe Ratings Index	ICG
1794	MH-93-OUTFALL	200.0	6	12	3124	0.10 0	2.00 0	5
1793	MH-92-MH-93	335.0	4	9	4122	0.00 0	2.30 0	5
1791	MH-80-MH-92A	304.0	6	9	3121	0.00 0	1.50 0	5
1792	MH-92A-MH-92	78.0	2	2	1200	0.00 0	1.00 0	5

Totals	917.0	18	32
---------------	-------	----	----



Mobile Dredging & Video Pipe, Inc.
Phone:301-931-0707
Fax:301-931-0990

CCTV Surveys List for GREELEY & HANSEN LLC

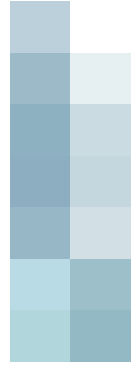
Number of surveys in this list is 4 as of Tuesday, January 3, 2023

Unit of measure: ft

Setup Date	Street	Start MH	Finish MH	Dir	Size inch	Pre Clean	Media Number	Scheduled Length	Surveyed Length	
1791	12/1/2022	222 ORONOCO ST.	MH-80	MH-92A	D	44	N	GREHA-12-1	304.0	304.0
1792	12/1/2022	119 ORONOCO ST.	MH-92A	MH-92	D	44	N	GREHA-12-1	78.0	78.0
1793	12/1/2022	119 ORONOCO ST.	MH-92	MH-93	D	44	N	GREHA-12-1	335.0	335.0
1794	12/1/2022	1 ORONOCO ST.	MH-93	OUTFALL	D	44	N	GREHA-12-1	200.0	194.0

Total Scheduled Length 917.0

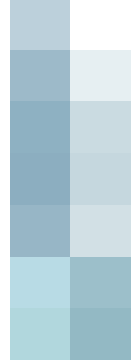
Total Length Surveyed 911.0



PACP Quick Rating

Client	GREELEY & HANSEN LLC	Contract	Project # E21-02-01
Project	Old Town South E21-02-01	UOM Ft	Project Start 12/13/2021
Location		Survey Count	4
Database	Y:\2022 DELIVERABLES FILES\GREELEY & HANSEN\GREEHA-20\OPERATOR DOWNLOADS\DECEMBER\WEEK 2\UZAROWSKI, Printed On Jan-03-2023		

Setup	PSR	From MH	To MH	Length	Size	Mat	Struct	O & M	Overall
1791	MH-80-MH-92A	MH-80	MH-92A	304.0	44	XXX	1300	3121	3121
1792	MH-92A-MH-92	MH-92A	MH-92	78.0	44	XXX	1200	1200	1400
1793	MH-92-MH-93	MH-92	MH-93	335.0	44	XXX	3100	4122	4131
1794	MH-93-OUTFALL	MH-93	OUTFALL	194.0	44	XXX	0000	3124	3124

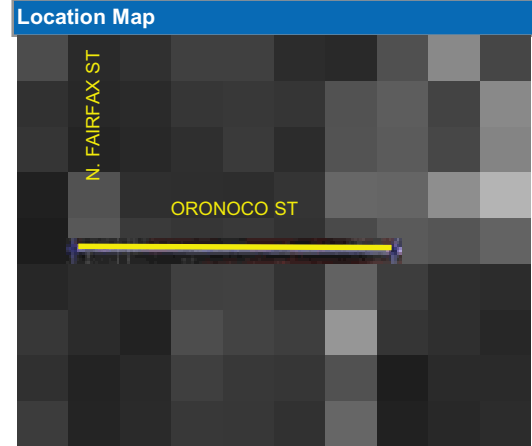


Mobile Dredging & Video Pipe, Inc. Phone:301-931-0707 Fax:301-931-0990

Appendix A.2 – CCTV Evaluation Forms

Oronoco Street Storm Pipe Assessment CCTV Evaluation Form

Stormpipe Summary			
Asset ID	MH80-MH92A	US Manhole	MH-80
Location	Oronoco Street	DS Manhole	MH-92A
	Fairfax to Lee	Size	72" x 44"
Install Date		Material	Cementitious Liner
Drawing No.		Shape	Elliptical
		GIS Length	309 LF



CCTV Summary			
Inspection Date	12/1/2022	Contractor	Mobile Dredging & Video Pipe, Inc.
Direction	Downstream	Inspector	
Inspected Length	304 LF	Certificate #	U-809-9223
Reverse Completed	N/A	Elapsed Time	0:22:22
Start Time	0:00:45	Video Speed	14 LF/min.
End Time	0:23:07		

Engineer Notes				
#	Description	Feet	From	Notes
1.	Start Inspection	0	MH-80	MH-80
2.	Infiltration Stain	21	MH-80	Photo 1
3.	Crack and Staining	172	MH-80	Circumferential, Photo 2
4.	Crack and Staining	254	MH-80	Circumferential, Photo 3
5.	Spall, Staining	295	MH-80	Photo 4
6.	End Inspection	304	MH-80	MH-92A

Engineer Comments	
1.	Lining recommended from DSMH 92A to 60-feet upstream of MH92A
2.	

Prepared By URS

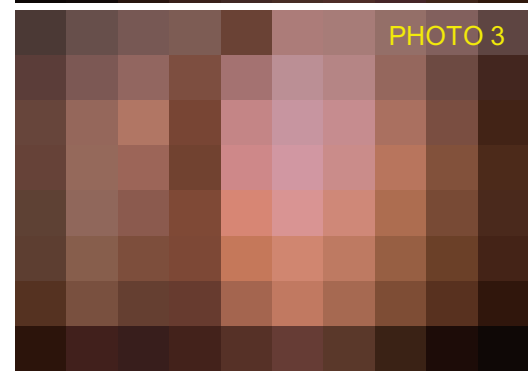
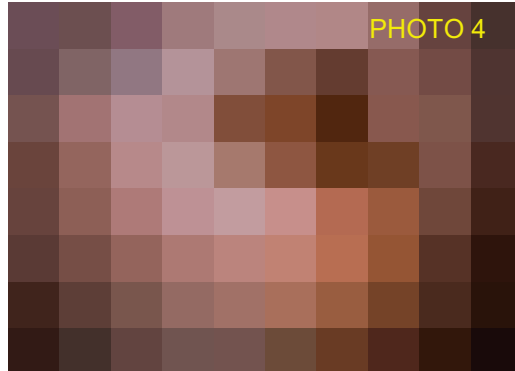
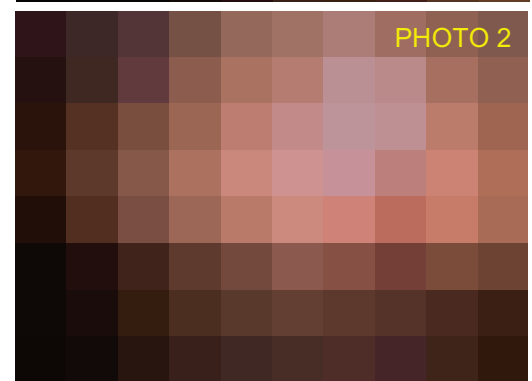
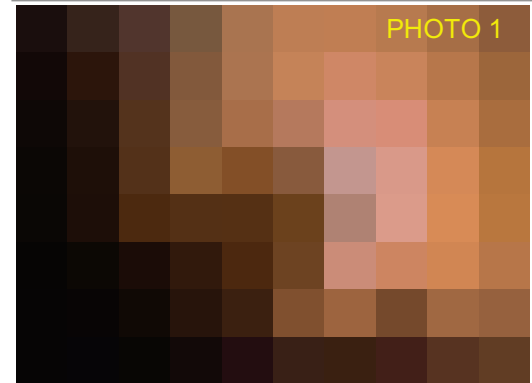


Eric Traenkner

6/5/2023

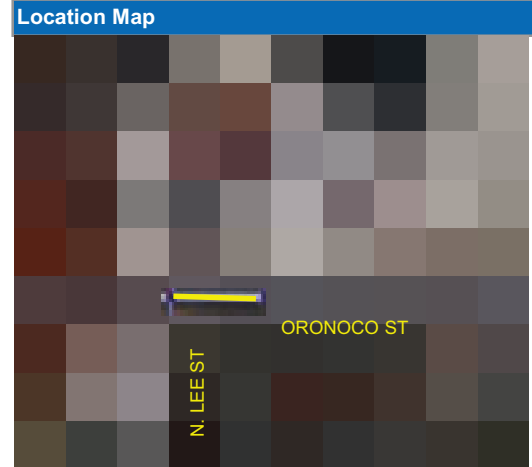
Date

Photographs



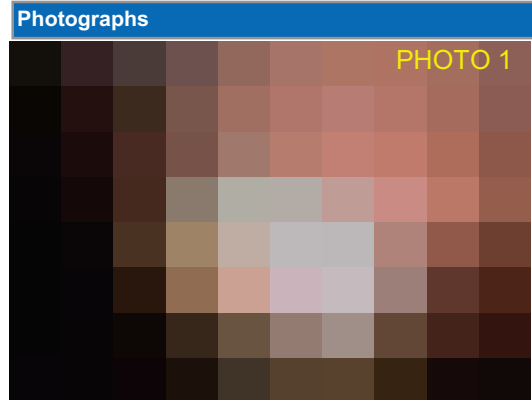
Oronoco Street Storm Pipe Assessment CCTV Evaluation Form

Stormpipe Summary			
Asset ID	MH92A-MH92	US Manhole	MH-92A
Location	Oronoco Street at Lee Street	DS Manhole	MH-92*
		Size	72" x 44"
Install Date		Material	Cementitious Liner
Drawing No.		Shape	Elliptical
		GIS Length	*

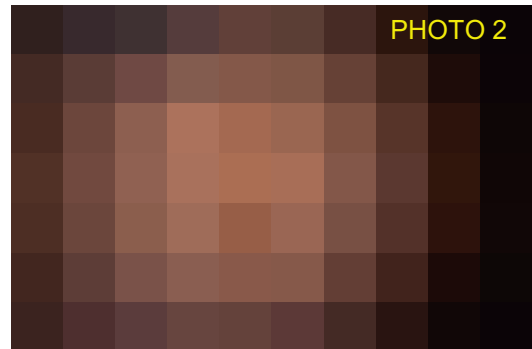


CCTV Summary			
Inspection Date	12/1/2022	Contractor	
Direction	Downstream	Mobile Dredging & Video Pipe, Inc.	
Inspected Length	78 LF	Inspector	
Reverse Completed	N/A	Certificate # U-809-9223	
Start Time	0:01:00	Elapsed Time	0:18:40
End Time	0:19:40	Video Speed	4 LF/min.

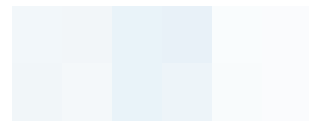
Engineer Notes				
#	Description	Feet	From	Notes
1.	Start Inspection	0	MH-92A	MH-92A
2.	Repair / Patch	18	MH-92A	4 O'clock, Photo 1
3.	Crack, Circumferential	18	MH-92A	Photo 2
4.	Stain, Infiltration	18	MH-92A	Photo 3
5.	Cracks, Multiple	30	MH-92A	
6.	Repair / Patch / Multiple	40.4	MH-92A	Continuous, Photo 4
7.	End Inspection	78	MH-92A	MH-92



Engineer Comments	
1.	*MH 92 not in City GIS.
2.	Lining recommended.



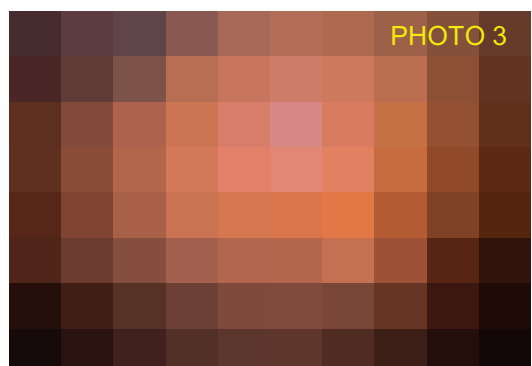
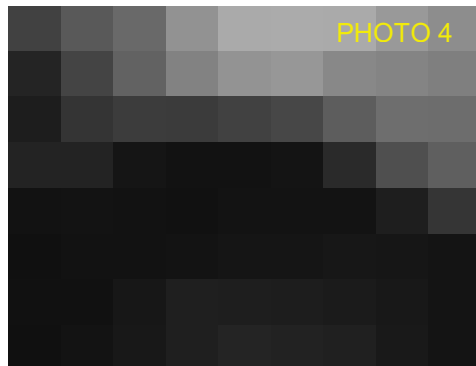
Prepared By URS



Eric Traenkner

6/5/2023

Date



Oronoco Street Storm Pipe Assessment CCTV Evaluation Form

Stormpipe Summary			
Asset ID	MH92-MH93	US Manhole	MH-92*
Location	Oronoco Street	DS Manhole	MH-93
	From Lee to Union	Size	72" x 44"
Install Date		Material	CIPP
Drawing No.		Shape	Elliptical
		GIS Length	*

CCTV Summary			
Inspection Date	12/1/2022	Contractor	
Direction	Downstream	Mobile Dredging & Video Pipe, Inc.	
Inspected Length	335 LF	Inspector	
Reverse Completed	N/A	Certificate # U-809-9223	
Start Time	0:00:50	Elapsed Time	0:52:20
End Time	0:53:10	Video Speed	6 LF/min.

Engineer Notes				
#	Description	Feet	From	Notes
1.	Start Inspection	0	MH-92	MH-92
2.	Weeping Infiltration	27	MH-92	Photo 1
3.	Lateral	190	MH-92	Infiltration, 3 O'clock, Photo 2
4.	Liner Wrinkle	259	MH-92	Photo 3
5.	End Inspection	335	MH-92	MH-93

Engineer Comments	
1.	Lining recommended.
2.	Pipe condition below water level and debris not visible.
3.	*MH 92 not in City GIS.

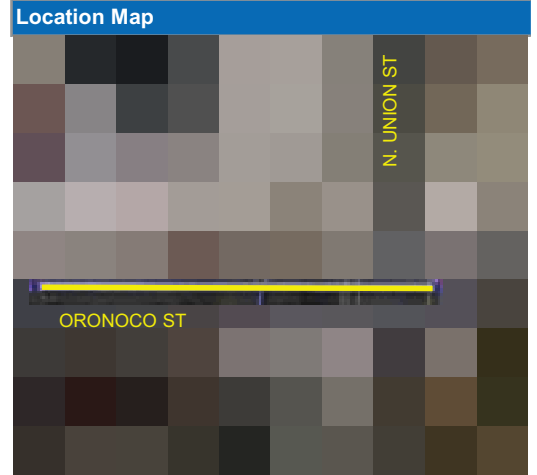
Prepared By URS



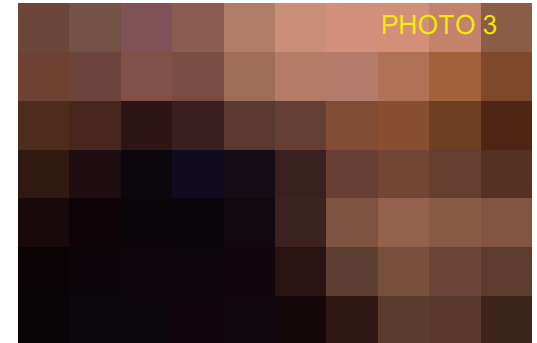
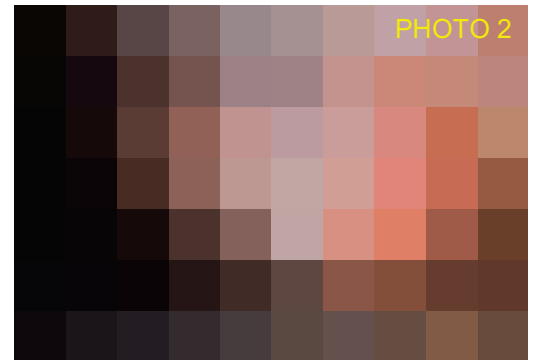
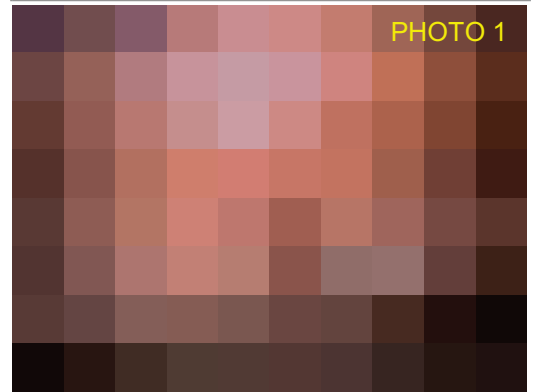
Eric Traenkner

6/5/2023

Date

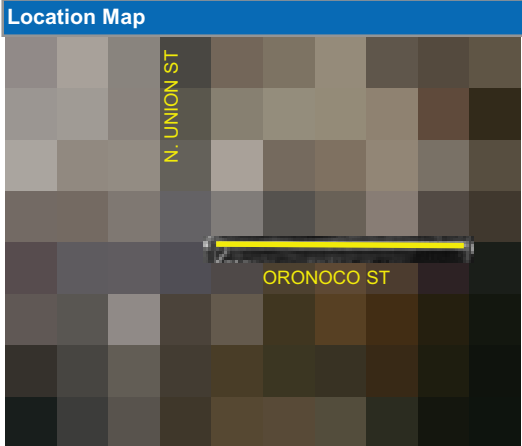


Photographs



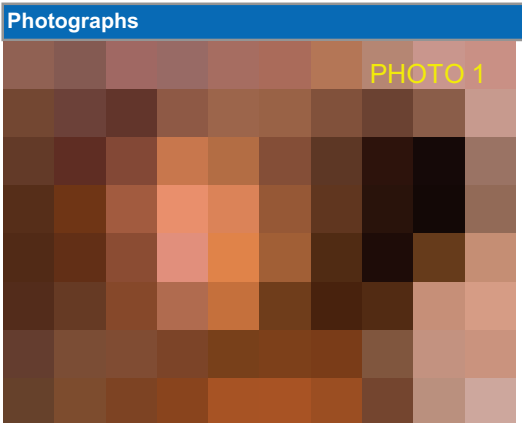
Oronoco Street Storm Pipe Assessment CCTV Evaluation Form

Stormpipe Summary			
Asset ID	MH93-Outfall	US Manhole	MH-93
Location	Oronoco Street	DS Manhole	Outfall
	East of Union Street	Size	72" x 44"
Install Date		Material	CIPP
Drawing No.		Shape	Elliptical
		GIS Length	223 LF

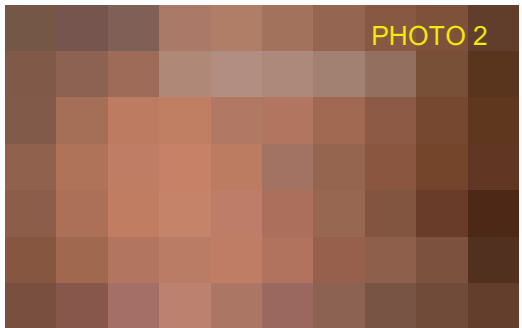


CCTV Summary			
Inspection Date	12/1/2022	Contractor	Mobile Dredging & Video Pipe, Inc.
Direction	Downstream	Inspector	
Inspected Length	194 LF	Certificate #	U-809-9223
Reverse Completed	N/A	Elapsed Time	0:22:15
Start Time	0:01:05	Video Speed	9 LF/min.
End Time	0:23:20		

Engineer Notes				
#	Description	Feet	From	Notes
1.	Start Inspection	0	MH-93	
2.	Lateral	9	MH-93	3 O'clock, Photo 1
3.	Hanging Liner Seam Strip	33	MH-93	Photo 2
4.	Weeping Infiltration	62	MH-93	3 O'clock
5.	Infiltration Stain	132	MH-93	Photo 3
6.	End Inspection	194	MH-93	Survey Abandoned, Photo 4



Engineer Comments	
1.	Pipe condition below water level and debris not visible.
2.	Survey abandoned at 194' due to debris and water level. Further inspection required. See Photo 4 for possible defect.
3.	Recommend full pipe cleanout and reinspection.



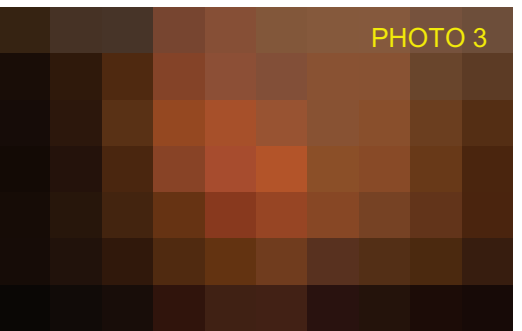
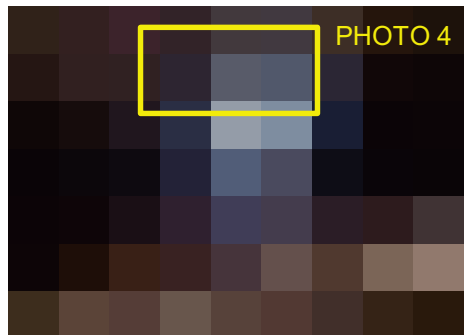
Prepared By URS



6/5/2023

Eric Traenkner

Date



Appendix B – Maximum Groundwater Concentrations of VOCs and SVOCs

Table 5-4 Comparison of 2017 and 2018 groundwater monitoring results – all wells

Parameter	2017 GW Results µg/L	2018 GW Results µg/L	DEQ VRP Screening Criteria (µg/L)			
	Max	Max	VRP Tier II Tap Water	VRP Tier III Res. VI	VRP Tier III Ind. VI	VRP Tier III CW
1,2,3-Trichloropropane	123	ND	0.01	2.21	9.27	0.09
1,2-Dichlorobenzene	0.47	ND	600	268	1,120	487
2-Butanone (MEK)	2.70	ND	560	224,000	946,000	1,865
Acetone	26	ND	1,400	2,240,000	NSL	13,400
Benzene	13,000	14,300	5	13.7	5.73	14.2
Chloroform	642	1.7	2.2	8.0	35.3	54.3
Chloromethane	1.20	ND	19	26.1	108	432
cis-1,2-Dichloroethene	0.25	163	70	NE	NE	2,260
Diisopropyl ether	1.30	1.20	150	697	2,960	146
Ethylbenzene	847	1,250	700	34.1	152	591
m&p-Xylene	1,720	2,550	19	69.5	306	41.6
Methylene Chloride	11.6	ND	5	474	1,960	195
Methyl-tert-butyl ether	0.91	ND	140	4,580	19,600	524
Naphthalene	12,600	10,300	0.61	17.2	72.3	0.77
o-Xylene	1,010	1,320	19	47.2	208	20.9
Styrene	1,710	2,810	100	889	3,910	581
Tetrachloroethene	3.50	126.0	5	5.8	24.9	10.40
Toluene	7,270	11,000	1,000	1,920	8,100	949
Trichloroethene	0.6	804	5	0.52	2.19	0.46
Xylene (Total)	2,730	1,070	10,000	36.9	162	83.1
Total Maximum VOCs	41,700	45,696				
1-Methylnaphthalene	17,700	8,330	11	NE	NE	1,020
2,4,5-Trichlorophenol	270	91	120	NE	NE	7,860
2,4,6-Trichlorophenol	36	ND	1.2	NE	NE	27.4
2,4-Dichlorophenol	1,120	ND	4.6	NE	NE	1,060
2,4-Dimethylphenol	765	ND	36	NE	NE	5,390
2-Chlorophenol	15	1,060	9.1	NE	NE	1,110
2-Methylnaphthalene	25,500	ND	3.6	NE	NE	59
2-Methylphenol(o-Cresol)	3,560	11,600	93	NE	NE	30,200
3&4-Methylphenol(m&p Cresol)	1,980	2,200	140	NE	NE	4,260
4-Nitrophenol	6	323	NE	NE	NE	NE
Acenaphthene	894	ND	53	NE	NE	2,950
Acenaphthylene	7,010	362	12	NE	NE	1,430
Anthracene	1,940	2,490	180	NE	NE	7,850
Benzo(a)anthracene	981	877	0.34	347	NE	69.3
Benzo(a)pyrene	615	514	0.20	NE	NE	0.29
Benzo(b)fluoranthene	471	553	2.5	NE	NE	122
Benzo(k)fluoranthene	261	2,840	3.4	NE	NE	817
Chrysene	738	121	250	NE	NE	9,950
Dibenzofuran***	574	447	0.79	NE	NE	48.4
Fluoranthene	1,740	27	80	NE	NE	311
Fluorene	3,250	804	29	NE	NE	4,370
Indeno(1,2,3-cd)pyrene	NA	1,290	0.34	NE	NE	58.5
Naphthalene	35,500	18,300	0.61	17.2	72.3	0.77
Pentachlorophenol***	65	8,330	1.0	NE	NE	5.54
Phenanthrene	6,330	3,180	12	NE	NE	1,430
Pheno***	1,260	114	580	NE	NE	147,000
Pyrene	2,170	1,070	12	NE	NE	1,430
Total Maximum SVOCs	156,451	110,618				

NE = Not Evaluated - No Specified Limit; No Analysis; orange highlights denote concentrations in excess of Tier II screening levels; yellow highlights exceed one or more Tier III levels

OWNER

CITY OF ALEXANDRIA
 DEPARTMENT OF PROJECT IMPLEMENTATION
 301 KING STREET, ROOM 5200
 ALEXANDRIA, VA 22314

APPLICANT/DEVELOPER

CITY OF ALEXANDRIA
 DEPARTMENT OF PROJECT IMPLEMENTATION
 301 KING STREET, ROOM 5200
 ALEXANDRIA, VA 22314

CITY OF ALEXANDRIA COMPREHENSIVE ENVIRONMENTAL SERVICES CONTRACT

CONTRACT NO. 00000296
 PROJECT NUMBER 0705345
 AECOM PROJECT NUMBER 60705345

SHEET NO.	DRAWING NO.	SHEET NAME
01	G-001	COVER SHEET
02	G-002	GENERAL NOTES
03	C-001	EXISTING CONDITIONS PLAN - 1 OF 2
04	C-002	EXISTING CONDITIONS PLAN - 2 OF 2
05	C-003	CIP LINING PLAN & PROFILE - ORONOCO ST
06	C-004	CIP LINING PLAN & PROFILE - ORONOCO ST
07	C-005	CIP LINING PLAN & PROFILE - ORONOCO ST
08	C-006	TEMPORARY TRAFFIC CONTROL PLAN - 1 OF 2
09	C-007	TEMPORARY TRAFFIC CONTROL PLAN - 2 OF 2
10	C-901	STANDARD DETAILS

CITY OF ALEXANDRIA, VIRGINIA



**ORONOCO STREET STORM SEWER PIPE REHABILITATION
 100% PLANS
 MARCH 2024**



CITY OF ALEXANDRIA



VICINITY MAP



12420 MILESTONE CENTER DRIVE, SUITE 150
 GERMANTOWN, MD 20876
 GARY TRUYENS, P.E.
 GARY.TRUYENS@AECOM.COM



CITY OF ALEXANDRIA, VIRGINIA
 DEPARTMENT OF PROJECT IMPLEMENTATION
 301 KING STREET, SUITE 3200
 ALEXANDRIA, VIRGINIA 22314

REVISIONS	DATE	DESCRIPTION

ALEXANDRIA PROJECT NO.:	
CONSULTANT PROJECT ID.:	
DESIGNED BY:	
DRAWN BY:	
CHECKED BY:	
APPROVED BY:	
DATE:	

SEAL:

12420 MILESTONE CENTER DRIVE, SUITE 150
 GERMANTOWN, MD 20876
 (301) 252-2934

COVER SHEET

DRAWING: **G-001**
 SCALE: **AS SHOWN**
 SHEET: **01 OF 10**

NOT FOR CONSTRUCTION

PROJECT DESCRIPTION	THIS TASK ORIENTALS: 1. THE CLEANING AND REHABILITATION OF APPROXIMATELY 400LF STORM SEWER ALONG ORONOCO ST BETWEEN APPROXIMATELY 60 FEET WEST OF N LEE ST AND N UNION ST. 2. THE HEAVY CLEANING/CLEANOUT AND CCTV OF THE STORM SEWER BETWEEN N UNION ST AND THE STORM SEWER OUTFALL.
DEPARTMENT OF PROJECT IMPLEMENTATION	APPROVED
DIRECTOR	<input checked="" type="checkbox"/> DATE: _____
RECOMMENDED FOR APPROVAL	<input checked="" type="checkbox"/> DATE: _____
DEPUTY DIRECTOR OF OPERATIONS	<input checked="" type="checkbox"/> DATE: _____
RECOMMENDED FOR APPROVAL	<input checked="" type="checkbox"/> DATE: _____
DEPUTY DIRECTOR OF INFRASTRUCTURE & ENVIRONMENT	<input checked="" type="checkbox"/> DATE: _____
RECOMMENDED FOR APPROVAL	<input checked="" type="checkbox"/> DATE: _____
DEPUTY DIRECTOR OF TRANSPORTATION	<input checked="" type="checkbox"/> DATE: _____



CITY OF ALEXANDRIA, VIRGINIA
 DEPARTMENT OF PROJECT
 IMPLEMENTATION
 301 KING STREET, SUITE 3200
 ALEXANDRIA, VIRGINIA 22314

REVISIONS	DATE	BY	DESCRIPTION

ALEXANDRIA PROJECT NO.:	
DATE OF PLAN ISSUANCE:	
CONSULTANT PROJECT ID.:	
DESIGNED BY:	
DATE:	
DRAWN BY:	
DATE:	
CHECKED BY:	
DATE:	
APPROVED BY:	
DATE:	

SEAL

EXISTING CONDITIONS
 PLAN - 1 OF 2
 12420 MILESTONE CENTER DRIVE, SUITE 150
 GERMANTOWN, MD 20876
 (301) 250-2934

DRAWING: C-001
 SCALE: 1" = 20'
 SHEET: 03 OF 10

NOT FOR CONSTRUCTION

LEGEND

- EX. STORM SEWER (SURVEY)
- EX. STORM SEWER (GS)
- PROPOSED WORK
- PROPERTY LINE
- STORM MANHOLE
- SILT BAG



VA. COORDINATE SYSTEM OF 1983 (MYCS2)



PLAN VIEW



CITY OF ALEXANDRIA, VIRGINIA
 DEPARTMENT OF PROJECT
 IMPLEMENTATION
 301 KING STREET, SUITE 3200
 ALEXANDRIA, VIRGINIA 22314

DATE	BY	DESCRIPTION

ALEXANDRIA PROJECT NO.:	
CONSULTANT PROJECT ID.:	
DATE OF PLAN ISSUANCE:	
DESIGNED BY:	
DRAWN BY:	
CHECKED BY:	
APPROVED BY:	
DATE:	

SEAL:

EXISTING CONDITIONS
 PLAN - 2 OF 2
 12420 MILESTONE CENTER DRIVE, SUITE 150
 GERMANTOWN, MD 20876
 (301) 250-2934

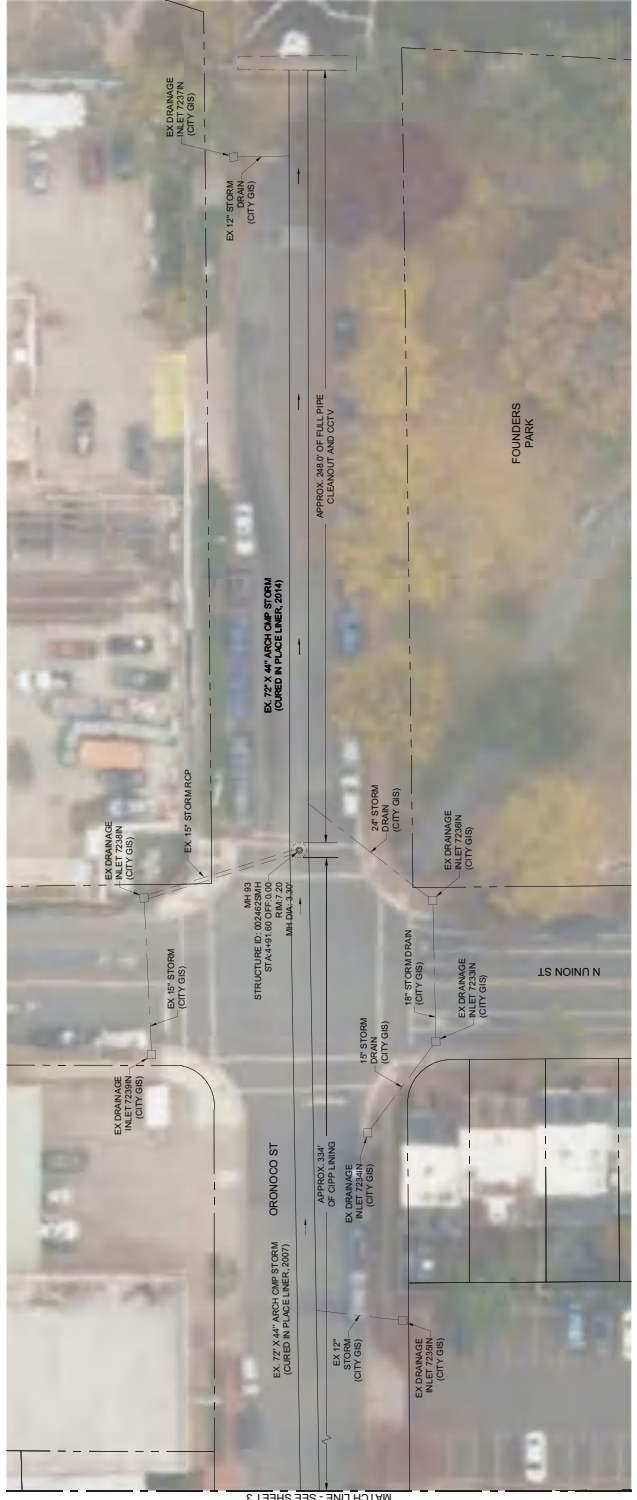
DRAWING: C-002
 SCALE: 1" = 20'
 SHEET: 04 OF 10

NOT FOR CONSTRUCTION

LEGEND

- EX. STORM SEWER (SURVEY)
- EX. STORM SEWER (GIS)
- PROPOSED WORK
- PROPERTY LINE
- STORM MANHOLE

VA. COORDINATE SYSTEM OF 1983 (MYCS2)



PLAN VIEW





CITY OF ALEXANDRIA, VIRGINIA
 DEPARTMENT OF PROJECT
 IMPLEMENTATION
 301 KING STREET, SUITE 3020
 ALEXANDRIA, VIRGINIA 22314

DATE	REVISIONS	DESCRIPTION

ALEXANDRIA PROJECT NO.:
 DATE OF PLAN ISSUANCE:
 CONSULTANT PROJECT ID:
 DESIGNED BY: DATE:
 DRAWN BY: DATE:
 CHECKED BY: DATE:
 APPROVED BY: DATE:

SEAL:
 CIPP LINING PLAN &
 PROFILE - ORONOCO ST
 13420 MILESTONE CENTER DRIVE, SUITE 150
 GERRARDMAN, MD 20878
 (301) 250-2934

DRAWING: C-003
 SCALE: 1" = 20'
 SHEET: 05 OF 10

- GENERAL SHEET NOTES**
1. CARE SHALL BE TAKEN TO PREVENT ANY CONTAMINANTS OR HAZARDOUS MATERIALS FROM ENTERING THE STORM SEWER.
 2. CONTRACTOR SHALL IMPLEMENT APPROPRIATE EROSION CONTROL MEASURES TO PREVENT SEDIMENT RUNOFF.
 3. BLIND CONNECTIONS SHOWN IN PROFILE ARE APPROXIMATE. CONTRACTOR TO VERIFY LOCATIONS OF PIPE CONNECTIONS.
 4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR KEEPING SILT AND DEBRIS OUT OF THE STORM DRAINAGE SYSTEM, RIVERS, ETC. FOR THE DURATION OF THE PROJECT.
 5. CONTRACTOR SHALL USE TYPE A AGGREGATE BASE FOR ASPHALT RESTORATION.
 6. CONTRACTOR SHALL PERFORM SUBSURFACE UTILITY SCREENING PRIOR TO MANHOLE EXCAVATION.

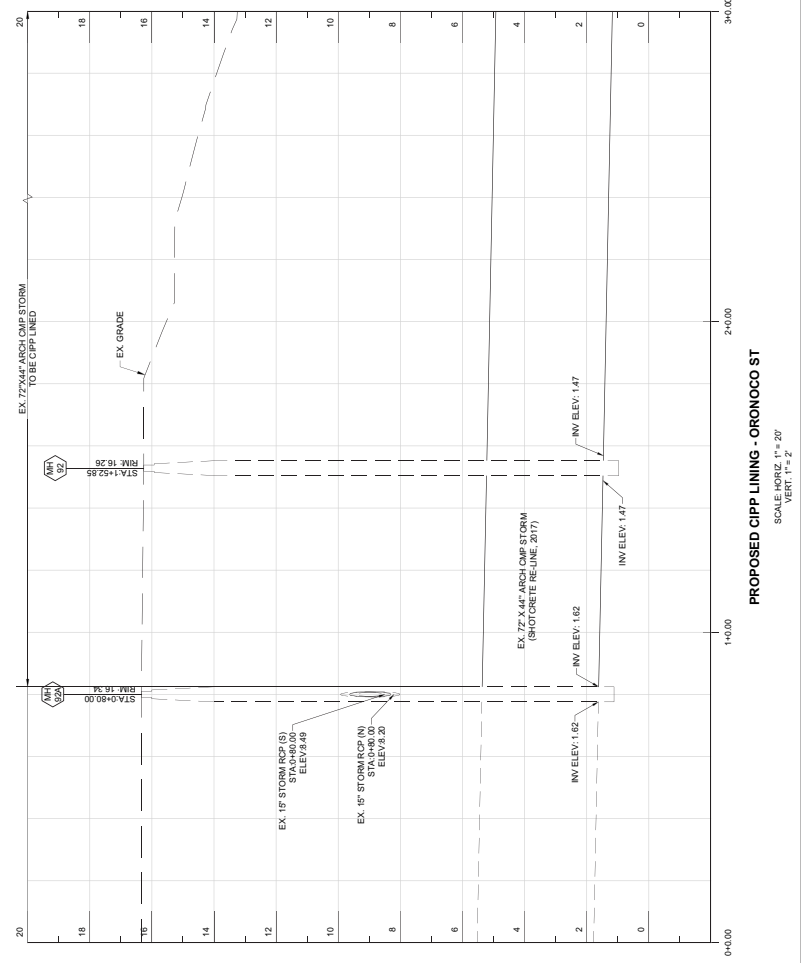
LEGEND

	ASPHALT RESTORATION
	EX. STORM SEWER (SURVEY)
	EX. STORM SEWER (GIS)
	PROPOSED WORK
	PROPERTY LINE
	SILT BAG



MATCH LINE - SEE SHEET 6

VA. COORDINATE SYSTEM OF 1983 (MYCS2)



PROPOSED CIPP LINING - ORONOCO ST
 SCALE: HORIZ. 1" = 20'
 VERT. 1" = 2'



CITY OF ALEXANDRIA, VIRGINIA
 DEPARTMENT OF PROJECT
 IMPLEMENTATION
 301 KING STREET, SUITE 2020
 ALEXANDRIA, VIRGINIA 22314

DATE	BY	DESCRIPTION

APPROVED BY:	DATE:
CHECKED BY:	DATE:
DESIGNED BY:	DATE:
CONSULTANT PROJECT ID:	
DATE OF PLAN ISSUANCE:	
ALEXANDRIA PROJECT NO.:	

12420 MILESTONE CENTER DRIVE, SUITE 150
 GERMANTOWN, MD 20878
 (301) 252-2934
**CIP LINING PLAN &
 PROFILE - ORONOCO ST**

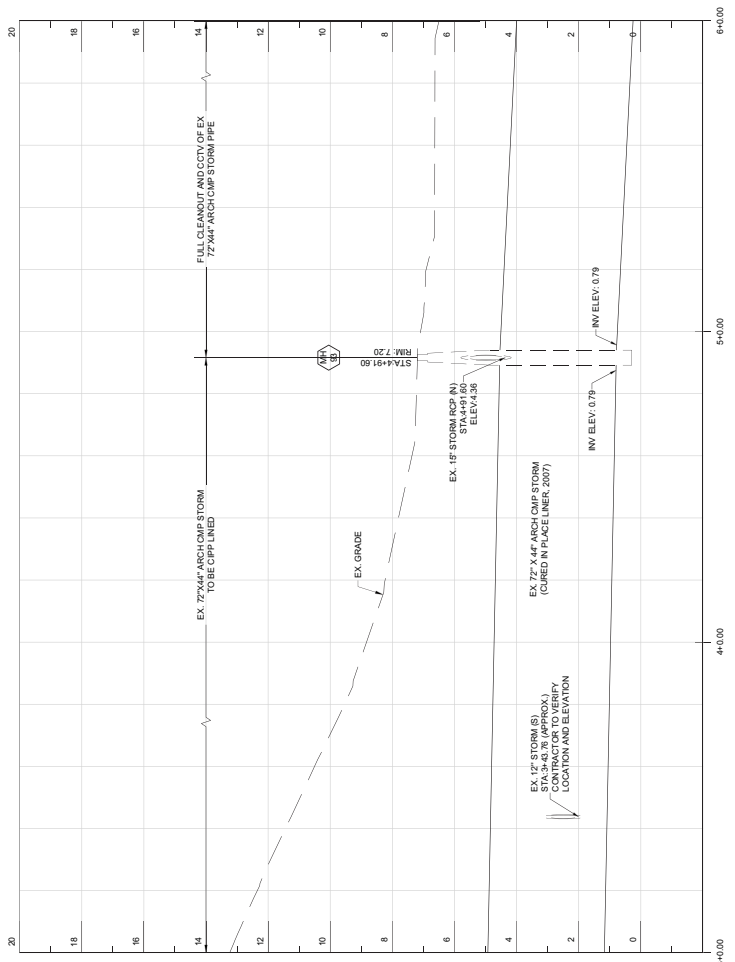
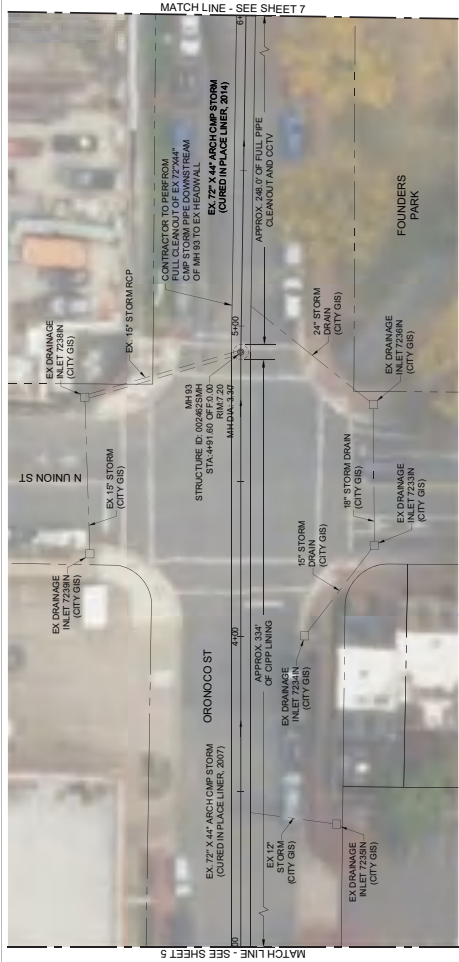
DRAWING: C-004
 SCALE: 1" = 20'
 SHEET: 06 OF 10

- GENERAL SHEET NOTES**
- CARE SHALL BE TAKEN TO PREVENT ANY CONTAMINANTS OR HAZARDOUS MATERIALS FROM ENTERING THE STORM SEWER.
 - CONTRACTOR SHALL IMPLEMENT APPROPRIATE EROSION CONTROL MEASURES TO PREVENT SEDIMENT RUNOFF.
 - THE CONTRACTOR SHALL CONDUCT A FULL PIPE CLEANOUT AS INDICATED ON THE PLANS TO REMOVE ANY SEDIMENT, DEBRIS, OR OTHER MATERIALS THAT MAY BE PRESENT WITHIN OR COMPROMISE THE EFFICIENCY OF THE STORMWATER CONVEYANCE SYSTEM.
 - ALL ACCUMULATED SEDIMENT AND DEBRIS REMOVED DURING FULL PIPE CLEANOUTS SHALL BE PROPERLY STORED AND DISPOSED OF IN ACCORDANCE WITH APPLICABLE ENVIRONMENTAL REGULATIONS AND GUIDELINES.
 - BLIND CONNECTIONS SHOWN IN PROFILE ARE APPROXIMATE LOCATIONS. CONTRACTOR TO VERIFY LOCATIONS OF PIPE CONNECTIONS.

LEGEND

EX STORM SEWER (SURVEY)	---
EX STORM SEWER (GIS)	---
PROPOSED WORK	---
PROPERTY LINE	---

NOT FOR CONSTRUCTION



PROPOSED CIP LINING - ORONOCO ST

SCALE: HORIZ. 1" = 20'
 VERT. 1" = 2'



CITY OF ALEXANDRIA, VIRGINIA
 DEPARTMENT OF PROJECT
 IMPLEMENTATION
 301 KING STREET, SUITE 3200
 ALEXANDRIA, VIRGINIA 22314

DATE	BY	DESCRIPTION

ALEXANDRIA PROJECT NO.:	
DATE OF PLAN ISSUANCE:	
CONSULTANT PROJECT ID.:	
DESIGNED BY:	
DRAWN BY:	
CHECKED BY:	
APPROVED BY:	
DATE:	

12420 MILESTONE CENTER DRIVE, SUITE 150
 GERMANTOWN, MD 20876
 (301) 250-2934
**CIPP LINING PLAN &
 PROFILE - ORONOCO ST**

DRAWING: C-005
 SCALE: 1" = 20'
 SHEET: 07 OF 10

GENERAL SHEET NOTES

- CARE SHALL BE TAKEN TO PREVENT ANY CONTAMINANTS OR HAZARDOUS MATERIALS FROM ENTERING THE STORM SEWER.
- CONTRACTOR SHALL IMPLEMENT APPROPRIATE EROSION CONTROL MEASURES TO PREVENT SEDIMENT RUNOFF.
- THE CONTRACTOR SHALL CONDUCT A FULL PIPE CLEANOUT AS INDICATED ON THE PLANS TO REMOVE ANY SEDIMENT, DEBRIS, OR OTHER MATERIALS THAT MAY OBSTRUCT FLOW OR COMPROMISE THE EFFICIENCY OF THE STORMWATER CONVEYANCE SYSTEM.
- ALL ACCUMULATED SEDIMENT AND DEBRIS REMOVED DURING THE CLEANOUT SHALL BE PROPERLY STORED AND DISPOSED OF IN ACCORDANCE WITH APPLICABLE ENVIRONMENTAL REGULATIONS AND GUIDELINES.
- CONTRACTOR TO VERIFY DIMENSIONS SHOWN IN TYPICAL SECTION OF EXISTING 72"x44" ARCH CMP STORM PIPE PRIOR TO ORDERING CIPP LINER.
- BLIND CONNECTIONS SHOWN IN PROFILE ARE APPROXIMATE. CONTRACTOR TO VERIFY LOCATIONS OF PIPE CONNECTIONS.

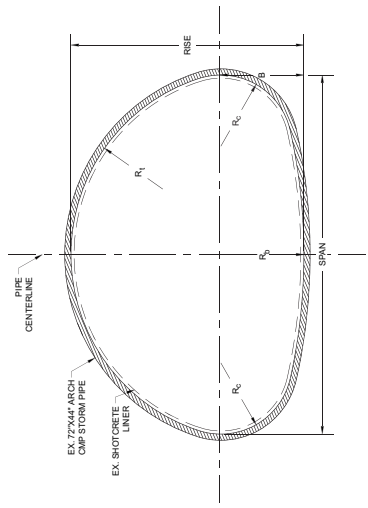
- EX. STORM SEWER (SURVEY)
- EX. STORM SEWER (GIS)
- PROPOSED WORK
- PROPERTY LINE



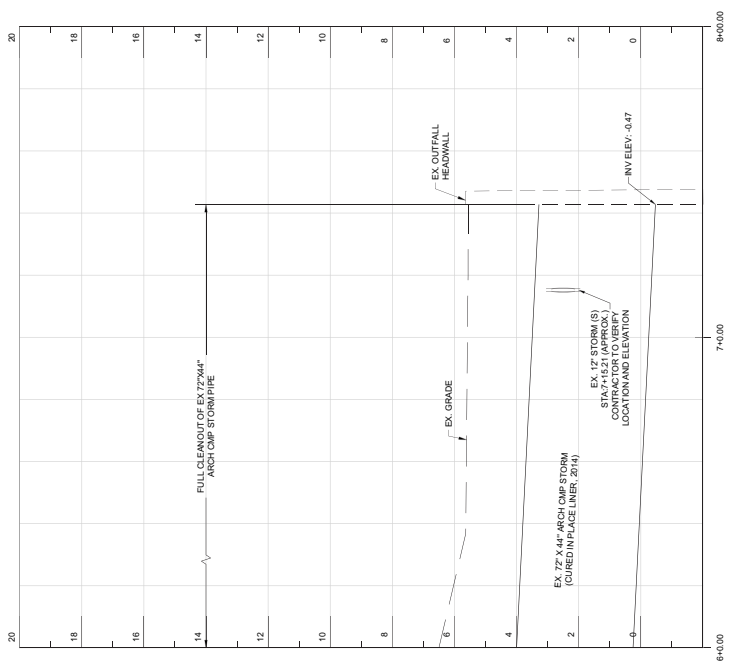
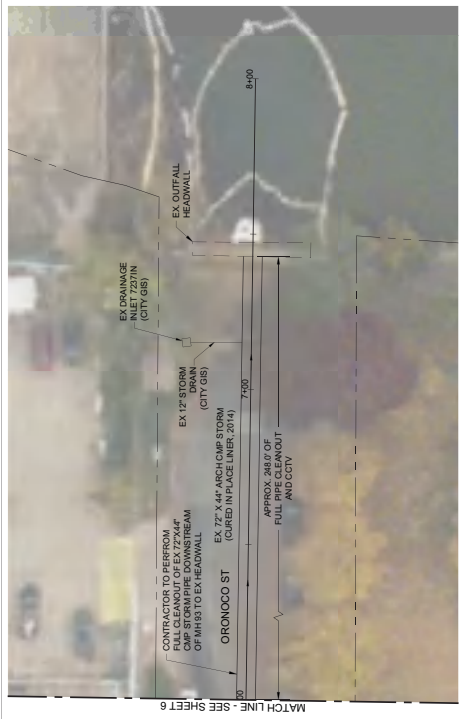
NOT FOR CONSTRUCTION



VA. COORDINATE SYSTEM OF 1983 (MYCS2)



SECTION OF EXISTING 72"x44" ARCH CMP STORM PIPE (TYPICAL)
 NOT TO SCALE



PROPOSED CIPP LINING - ORONOCO ST
 SCALE: HORIZ. 1" = 20'
 VERT. 1" = 2'



CITY OF ALEXANDRIA, VIRGINIA
 DEPARTMENT OF PROJECT
 IMPLEMENTATION
 301 KING STREET, SUITE 3200
 ALEXANDRIA, VIRGINIA 22314

DATE	BY	DESCRIPTION

ALEXANDRIA PROJECT NO.: _____
 DATE OF PLAN ISSUANCE: _____
 CONSULTANT PROJECT ID: _____
 DESIGNED BY: _____ DATE: _____
 DRAWN BY: _____ DATE: _____
 CHECKED BY: _____ DATE: _____
 APPROVED BY: _____ DATE: _____

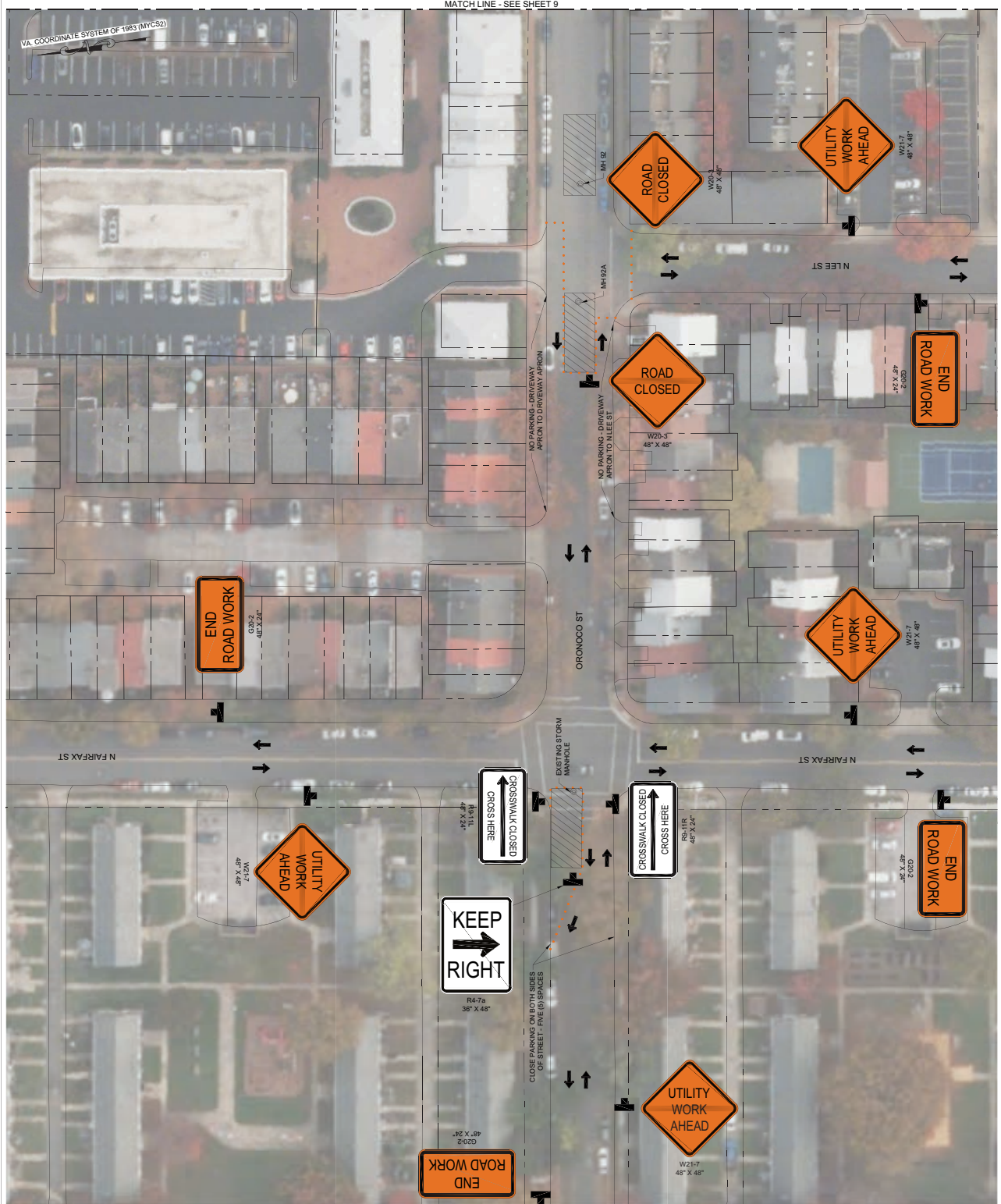
SEAL

TEMPORARY TRAFFIC
 CONTROL PLAN - 1 OF 2

DRAWING:
 C-006
 SCALE: 1" = 20'
 SHEET: 08 OF 10

NOT FOR CONSTRUCTION

- GENERAL SHEET NOTES**
1. RESIDENTS SHALL BE NOTIFIED 48 HOURS IN ADVANCE.
 2. NO STREET PARKING WILL BE ENFORCED ON ORONOCCO STREET DURING THESE TIMES WHERE SPECIFIED.
 3. CONTRACTOR SHALL BREAK DOWN TEMPORARY TRAFFIC CONTROL DEVICES AT NIGHT IF WORK WILL TAKE TWO DAYS.
 4. WORK ZONES WILL NOT ENCROACH ON EXISTING SIDEWALKS.
 5. FIRE HYDRANT WILL BE BLOCKED DURING BYPASS AT THE NORTHWEST CORNER OF ORONOCCO STREET AND NORTH FAIRFAX STREET. THE FIRE DEPARTMENT WILL BE NOTIFIED 48 HOURS IN ADVANCE.
 6. THE PARKING RESTRICTIONS LENGTH VARIES BASED ON TYPE OF WORK AND TRAFFIC CONTROLS. THE DATE OF WORK COMMENCING ALONG THE ROADWAY. THE DATE OF THE PARKING RESTRICTION WILL BE PLACED ON THE PARKING NOTICE SIGN.





CITY OF ALEXANDRIA, VIRGINIA
 DEPARTMENT OF PROJECT
 IMPLEMENTATION
 301 KING STREET, SUITE 3200
 ALEXANDRIA, VIRGINIA 22314

REVISIONS	DATE	BY	DESCRIPTION

APPROVED BY:	DATE:
CHECKED BY:	DATE:
DRAWN BY:	DATE:
DESIGNED BY:	DATE:
CONSULTANT PROJECT ID:	
DATE OF PLAN ISSUANCE:	
ALEXANDRIA PROJECT NO.:	

SEAL

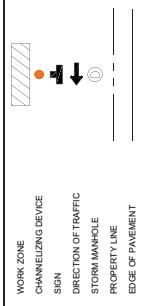
TEMPORARY TRAFFIC
 CONTROL PLAN - 2 OF 2

DRAWING: C-007
 SCALE: 1" = 20'
 SHEET: 09 OF 10

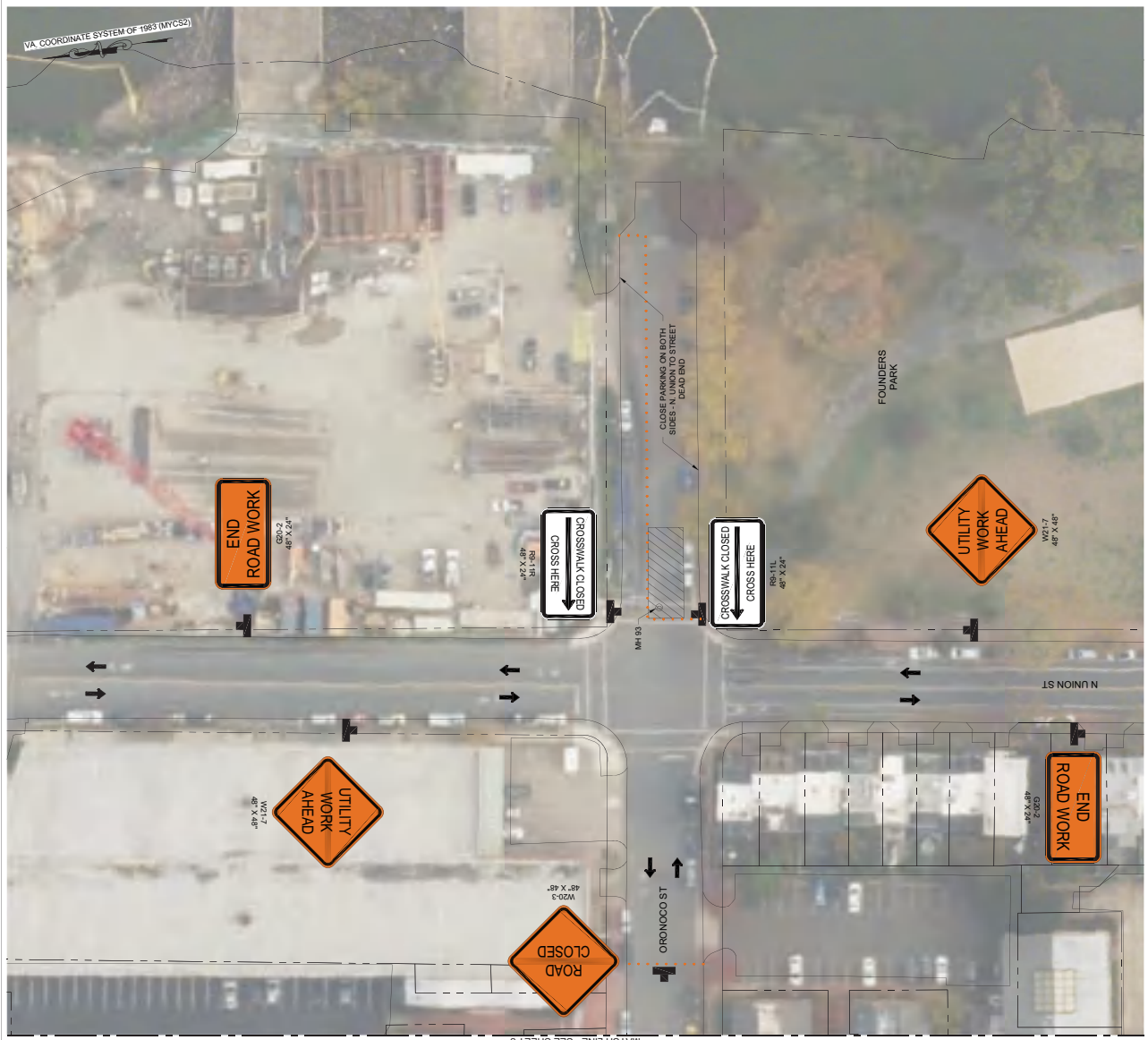
GENERAL SHEET NOTES

- RESIDENTS SHALL BE NOTIFIED 48 HOURS IN ADVANCE.
- NO STREET PARKING WILL BE ENFORCED ON ORONOCO STREET DURING THESE TIMES WHERE SPECIFIED.
- CONTRACTOR SHALL BREAKDOWN TEMPORARY TRAFFIC CONTROL DEVICES AT NIGHT IF WORK WILL TAKE TWO DAYS.
- WORK ZONES WILL NOT ENCRoACH ON EXISTING SIDEWALKS.
- IF THERE IS A PARKING LANE ALONG THE WORK ZONE ROADWAY, TEMPORARY PARKING RESTRICTIONS LENGTH SHALL BE LIMITED TO THE LENGTH OF THE PARKING LANE. WORK SHALL BE COMPLETED PRIOR TO WORK COMMENCING ALONG THE ROADWAY. THE CONTRACTOR SHALL PLACE A TEMPORARY TRAFFIC CONTROL PARKING NOTICE SIGN.

LEGEND



NOT FOR CONSTRUCTION



MATCH LINE - SEE SHEET 8



CITY OF ALEXANDRIA, VIRGINIA
 DEPARTMENT OF PROJECT
 IMPLEMENTATION
 301 KING STREET, SUITE 3200
 ALEXANDRIA, VIRGINIA 22314

DATE	DESCRIPTION

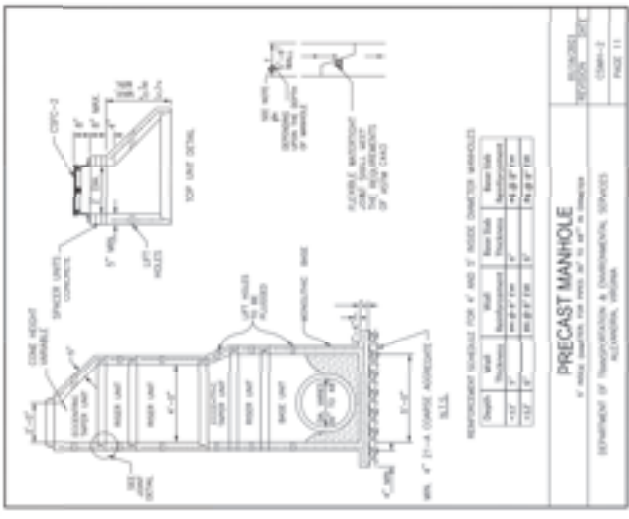
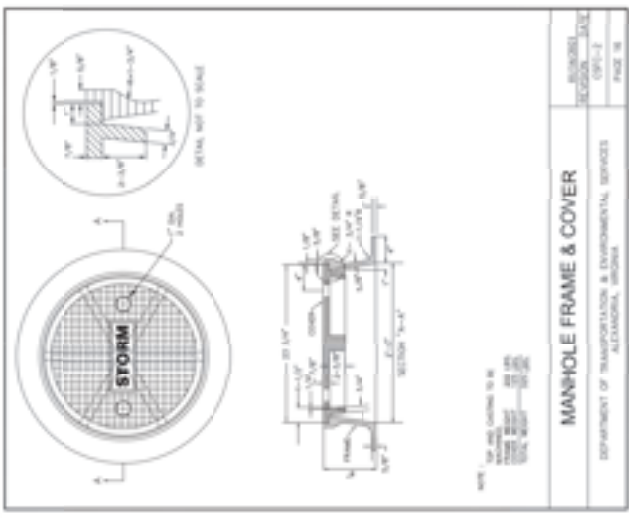
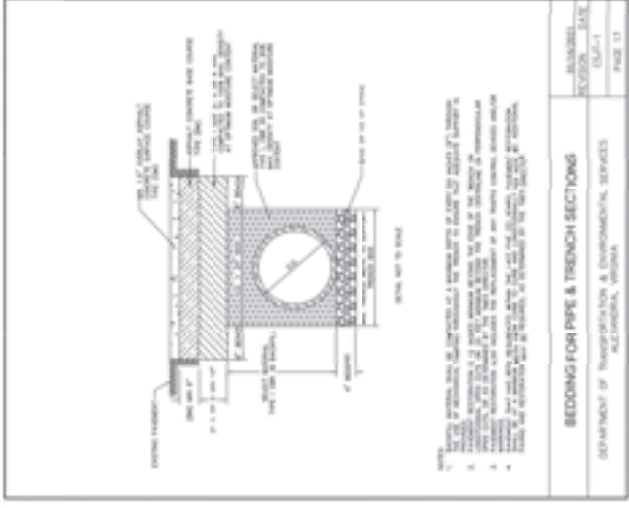
ALLEXANDRIA PROJECT NO.	
DATE OF PLAN ISSUANCE	
CONSULTANT PROJECT ID.	
DESIGNED BY:	
DATE:	
DRAWN BY:	
DATE:	
CHECKED BY:	
DATE:	
APPROVED BY:	
DATE:	

SEAL

STANDARD DETAILS

DRAWING: C-501
 SCALE: 1" = 20'
 SHEET: 10 OF 10

NOT FOR CONSTRUCTION



BEDDING FOR PIPE & TRENCH SECTIONS
 DEPARTMENT OF TRANSPORTATION & ENVIRONMENTAL SERVICES
 ALEXANDRIA, VIRGINIA

REVISION: 05/11
 SHEET: 10 OF 10

MANHOLE FRAME & COVER
 DEPARTMENT OF TRANSPORTATION & ENVIRONMENTAL SERVICES
 ALEXANDRIA, VIRGINIA

REVISION: 05/11
 SHEET: 10 OF 10

PRECAST MANHOLE
 DEPARTMENT OF TRANSPORTATION & ENVIRONMENTAL SERVICES
 ALEXANDRIA, VIRGINIA

REVISION: 05/11
 SHEET: 10 OF 10