2022 ANNUAL PROGRESS REPORT SWMU 1 – OILY WATER SEWER HF SINCLAIR PUGET SOUND REFINING LLC

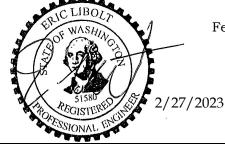
Prepared for:

Industrial Section Washington Department of Ecology PO Box 47600 Olympia, WA 98504-7600

Prepared by:

HF Sinclair Puget Sound Refining LLC 8505 South Texas Road Anacortes, WA 98221





February 27, 2023

Eric Libolt Professional Engineer #51580

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1.0 INTRODUCTION

This annual progress report has been prepared in accordance with the requirements in Section VII.C. of Agreed Order No DE 16298 (AO). The AO was entered into by the Washington State Department of Ecology (Ecology) and the predecessor to HF Sinclair Puget Sound Refining LLC (HFSPSR), Shell Oil Products US Puget Sound Refinery. The objective of the AO is to investigate and conduct remedial actions to the Puget Sound Refinery's oily water sewer (OWS) system, also referred to as Solid Waste Management Unit 1 (SWMU-1).

Per Section VII.A of the AO, an Investigation and Response Plan (IRP) was prepared to provide a framework to investigate the integrity of the OWS and respond to any releases or threatened releases from the OWS that are discovered during the investigation. Ecology approved the IRP by letter and email on June 24, 2022. The AO requires HFSPSR to submit an annual progress report to Ecology by April 1st of each year following the implementation of the IRP.

The IRP outlined four Phases of major OWS trunk line inspections to be completed by December 31, 2031. Video footage from previous sewer inspections was reviewed during 2022 to determine its suitability for inclusion in the inspection program.

The Puget Sound Refinery is situated two miles east of the city of Anacortes on the southern portion of March Point, a north-south oriented peninsula about 1.3 miles wide and 2.6 miles long. HFSPSR owns approximately 828 acres of the southern portion of March Point. The HFSPSR petroleum refining facilities occupy approximately 550 acres in the central portion of the property. The site address is 8505 South Texas Road, Anacortes, Washington 98221. The property location is shown on Figure 1.

Contact information for the Ecology site manager, project consultant and property owner/facility operator are included below.

- Ecology Site Manager: Andy Rippert
 - o Address: PO Box 47600, Olympia, WA 98504
 - Phone: (360) 522-2499
 - Email: arip461@ecy.wa.gov

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- Project Consultant: Whatcom Environmental Services, Inc.
 - \circ $\;$ Address: 228 E Champion St #101, Bellingham, WA 98225 $\;$
 - Contact: Eric Libolt
 - Phone: (360) 752-9571
 - Email: elibolt@whatcom-es.com
- Property Owner/Facility Operator: HFSPSR
 - \circ $\;$ Address: 8505 South Texas Road, Anacortes, WA 98221
 - Contact: Jim Schneider
 - Phone: (360) 293-0868
 - Email: Jim.Schneider@HFSinclair.com

2.0 DEVIATIONS FROM THE IRP

In accordance with the VII.C.1 of Agreed Order No. DE 16298 HF Sinclair Puget Sound Refining is required to report any deviations from the Investigation and Response Plan.

There were no deviations from the IRP in 2022.

3.0 OILY WATER SEWER ASSESSMENT

In accordance with the VII.C.2 of Agreed Order No. DE 16298 HF Sinclair Puget Sound Refining is required to report the findings of the sewer assessment, including the general condition of the OWS system components, the location and description of any problems identified and their cause, and a description of actions taken or planned to repair or maintain system components based on the results of the testing.

Section 2.1 of the IRP states that video inspections completed on major trunk lines at HFSPSR prior to the issuance of the IRP may be used to comply with Agreed Order 16298 provided that the video inspections are evaluated in accordance with the IRP requirements for video inspection. OWS inspections were conducted in 2017 and 2018 by HydroChem and in 2019 by Clean Harbors using CCTV equipment. All inspection videos were provided to Whatcom Environmental Services in 2022 for assessment using the National Association of Sewer Service Companies (NASSCO) rating system. The videos were reviewed for quality and completeness. Defects (e.g., cracking, fractures, offset joints, etc.) were classified using NASSCO's Pipeline Assessment Certification Program (PACP). Following assignment of a NASSCO rating, each defect was assigned an environmental evaluation ranking (EER) based on the potential for a release.

Four locations were identified to have either an EER of 3 or 4 equating to a moderate to high potential for process sewer exfiltration. These areas will be investigated to determine if a release has occurred. Repairs are being evaluated by HFSPSR. The video review report is provided in this report in Appendix A.

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4.0 RELEASES

In accordance with the VII.C.3 of Agreed Order No. DE 16298 HF Sinclair Puget Sound Refining is required to report information on the nature and extent of releases identified including the characteristics of the release, sampling results, how soil and groundwater quality was evaluated, and information on the extent of soil and groundwater impacts.

There were no confirmed (by investigation) releases identified in 2022.

5.0 CORRECTIVE ACTIONS AND INTERIM MEASURES TAKEN

In accordance with the VII.C.4 of Agreed Order No. DE 16298 HF Sinclair Puget Sound Refining is required to report a description of the corrective actions or interim measures taken or planned to remediate soil or groundwater, including the volume and disposition of contaminated soil removed, and measures taken to monitor or remediate groundwater.

No corrective actions or interim measures were taken or planned to remediate soil or groundwater in 2022.

6.0 INACCESSIBLE AREAS

In accordance with the VII.C.5 of Agreed Order No. DE 16298 HF Sinclair Puget Sound Refining is required to report areas that were determined to be inaccessible and where contaminated soil or groundwater was left in place.

No areas were determined to be inaccessible in 2022.

7.0 GEOLOGY AND HYDROGEOLOGY

In accordance with the VII.C.6 of Agreed Order No. DE 16298 HF Sinclair Puget Sound Refining is required to provide a discussion of the geology/hydrogeology in the area of any releases and how these characteristics may influence the migration of contaminants.

No confirmed releases were identified in 2022.

8.0 RISK OF CONTAMINATION MIGRATION

In accordance with the VII.C.7 of Agreed Order No. DE 16298 HF Sinclair Puget Sound Refining is required to report measures to assess and prevent the risk of migration of contamination until a final remedy is implemented, including the elements of a groundwater monitoring program (number and location of wells, parameters monitored, frequency of monitoring).

No areas of confirmed contamination were identified in 2022.

9.0 PREVIOUSLY DETERMINED INACCESSIBLE AREAS

In accordance with the VII.C.8 of Agreed Order No. DE 16298 HF Sinclair Puget Sound Refining is required to report a review of areas that were previously determined to be inaccessible to determine if they have become accessible in the last year, together with proposed timing and approach for remediation of the area(s). HF Sinclair Puget Sound Refining must submit a work plan for Ecology review and approval prior to initiating remedial action for a previously inaccessible area

No areas were previously determined to be inaccessible in 2022.

10.0 CONCLUSIONS

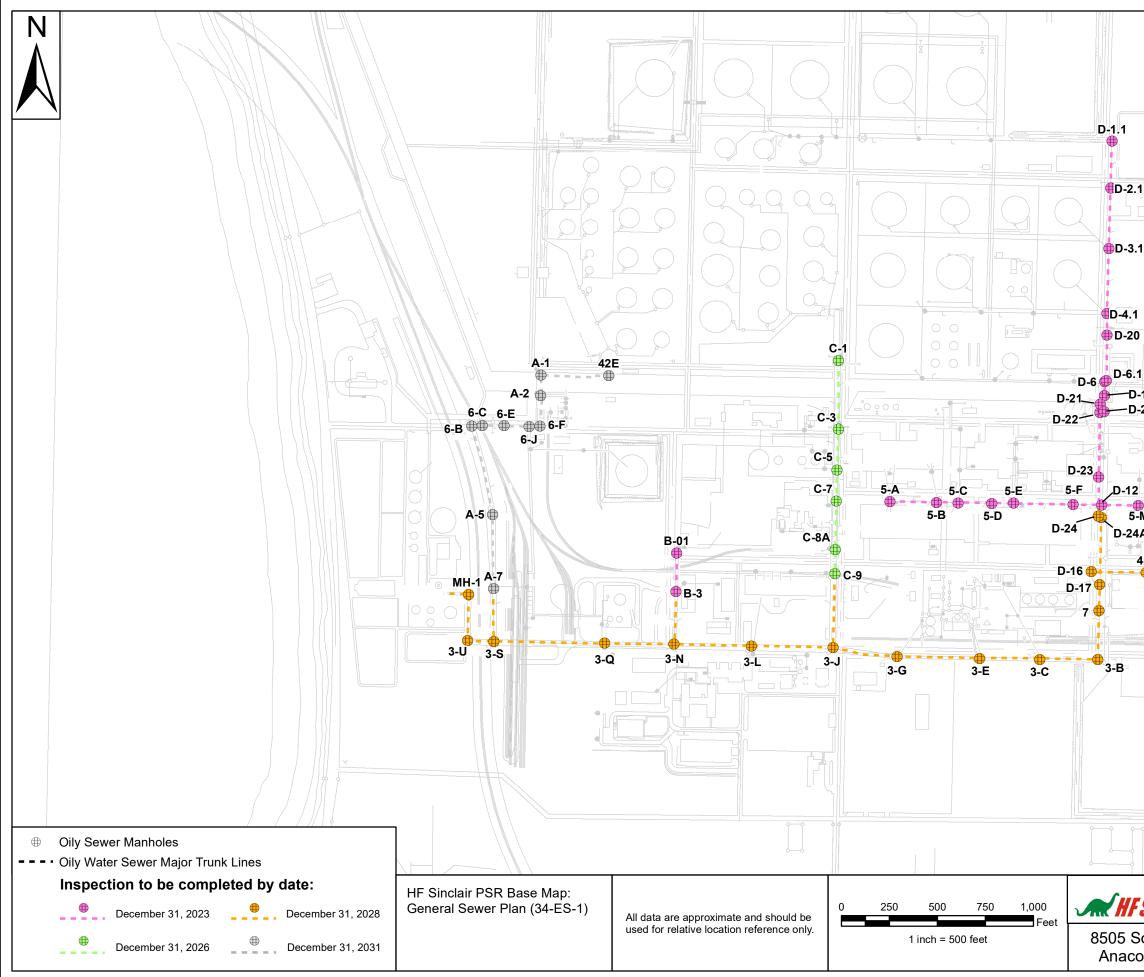
As part of the Phase I OWS investigation, sewer evaluations have been completed on previously inspected and filmed segments of the OWS at the Puget Sound Refinery. There were 4 locations that were identified to have a potential for release. Planning for site characterization, per the IRP, is in progress at all 4 locations.

As shown on Figure 2, further OWS site assessment of the Phase I investigation will continue in 2023 following the schedule presented in the Investigation and Response Plan.

11.0 REFERENCES

- HollyFrontier Puget Sound Refinery. June 15, 2022. Investigation and Response Plan SWMU 1 Oily Water Sewer.
- Washington State Department of Ecology (Ecology). Agreed Order for Interim Action Oily Water Sewer (SWMU-1). No. DE 16298.





Puget Sound Refinery Major Trunk Lines Oily Water Sewer Map Sinclair Oily Water Sewer Map outh Texas Road ortes, WA 98221 Prepared on: 2/27/23 Figure 2

APPENDIX A

2022 HF Sinclair PSR Existing Sewer Video Evaluation



soil • water • air compliance solutions

December 5, 2022

Ms. Tracey Anderson HF Sinclair Puget Sound Refining LLC 8505 South Texas Road Anacortes, WA 98221

RE: Evaluation and NASSCO Rating of Existing Sewer Videos

Ms. Anderson:

Whatcom Environmental Services conducted an evaluation of sewer video at the HF Sinclair Puget Sound Refining LLC (HFSPSR). Video inspections of the major trunk lines of the Oily Water Sewer (OWS) at HFSPSR are required to be conducted under the terms of Agreed Order 16298.

This evaluation was conducted on video which was previously recorded from inspections conducted on the OWS in 2017, 2018, and 2019. The review was performed by personnel certified by the National Association of Sewer Service Compliance (NASSCO) Pipeline Assessment Certification Program (PACP).

The evaluation was also completed to comply with Section 2.1 of the HFSPSR Investigation and Response Plan SWMU 1 – Oily Water Sewer (IRP). The IRP states that video inspections completed on major trunk lines at HFSPRS prior to the issuance of the IRP may be used to comply with Agreed Order 16298 provided that the video inspections are evaluated in accordance with the IRP requirements for video inspection.

The OWS inspection videos were reviewed by Henry Cade (NASSCO certification P0037737-052022). Surveys included video data collected in 2017 and 2018 by HydroChem and 2019 by Clean Harbors. A list and map of the OWS segments reviewed is provided in Table 1 and Figure 1, respectively. Each sewer video was uploaded then reviewed in Pipelogix Pheonix Version 1.2.6 SP 2 software. Additionally, each NASSCO code was given an Environmental Evaluation Ranking (EER) from 1 to 4 in pursuant to the evaluation rankings conducted for the Tulsa Refinery. The EER categories are listed below:

- EER 1: No potential to small potential for process sewer exfiltration. Examples include hairline cracks, joint improperly seated, slight corrosion in pipe, etc. Required actions: document rating in tracking system and long-term monitoring.
- EER 2: Small to moderate potential for process sewer exfiltration. Examples include moderate cracks/fractures; medium offset joint; moderate corrosion in pipe, etc. Required actions: document rating in tracking system and long-term monitoring.
- EER 3: Moderate to high potential for process sewer exfiltration. Examples include substantial fractures at or below the segment flow line, small hole located at pipe crown, large offset joint, etc. Required actions: document rating in tracking system and prioritize defects for repair in order of severity and/or short-term monitoring.
- EER 4: High potential/observed process sewer exfiltration. Examples include large hole located at or below segment flow line, completely separated joints with exposed surrounding soil, etc. Required actions: begin repair planning.

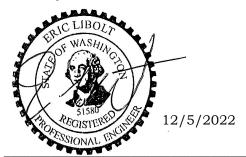
There were a total of 4 NASSCO codes that were rated at an EER of either 3 or 4. A list and description for each is provided in Table 2 and shown on Figure 2.

Attached are Pipe Graphic, Tabular, and Picture List reports generated in Pipelogix that summarize every NASSCO code in each sewer segment provided in Appendix A.

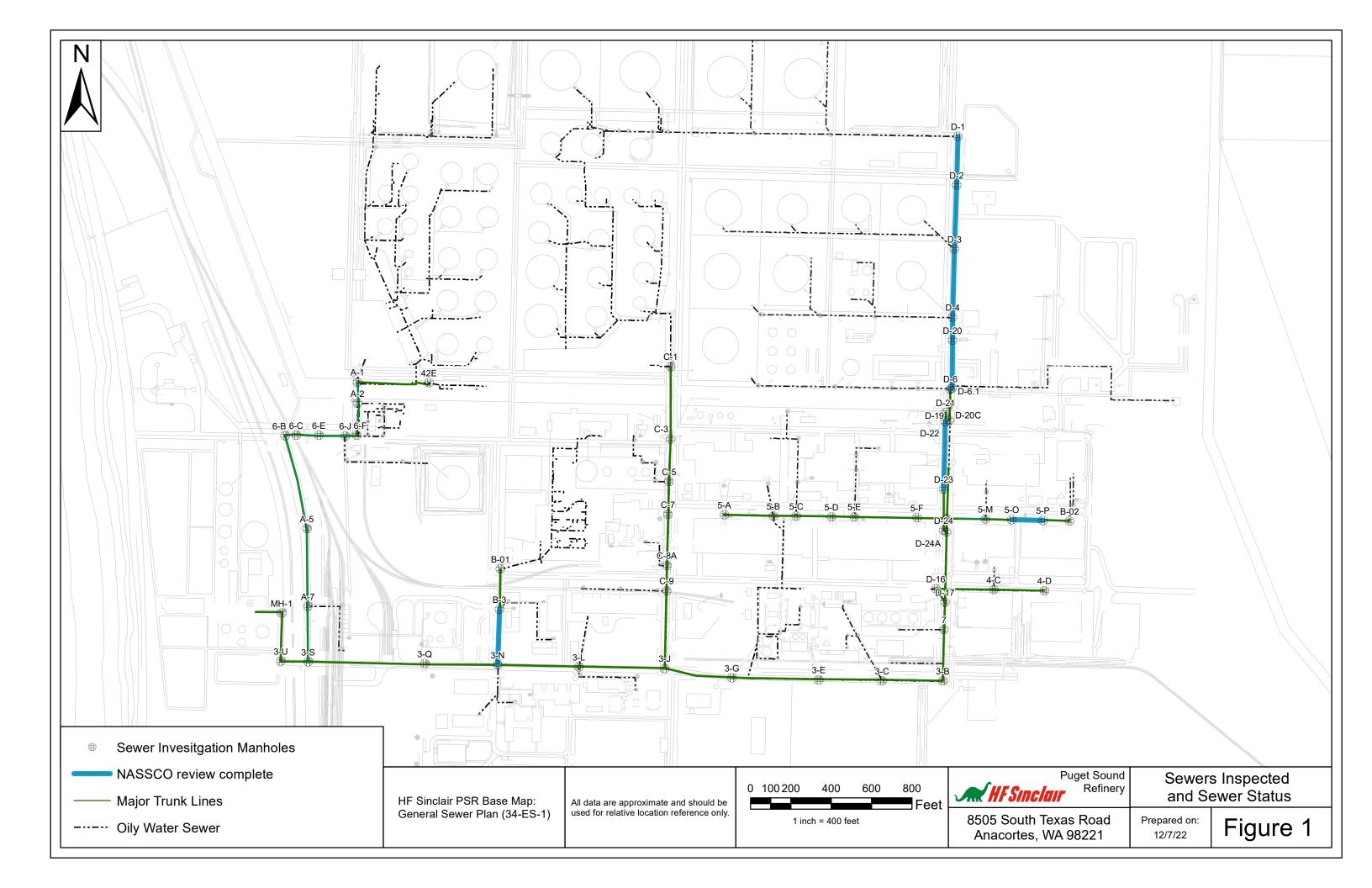
Per the IRP, the defects which were identified as EER 3 or EER 4 (as shown on Table 2) are considered potential releases. Site investigation activities should be initiated in these areas to determine if a release has occurred. In addition, pursuant to the IRP, these areas should be prioritized for sewer repairs as needed.

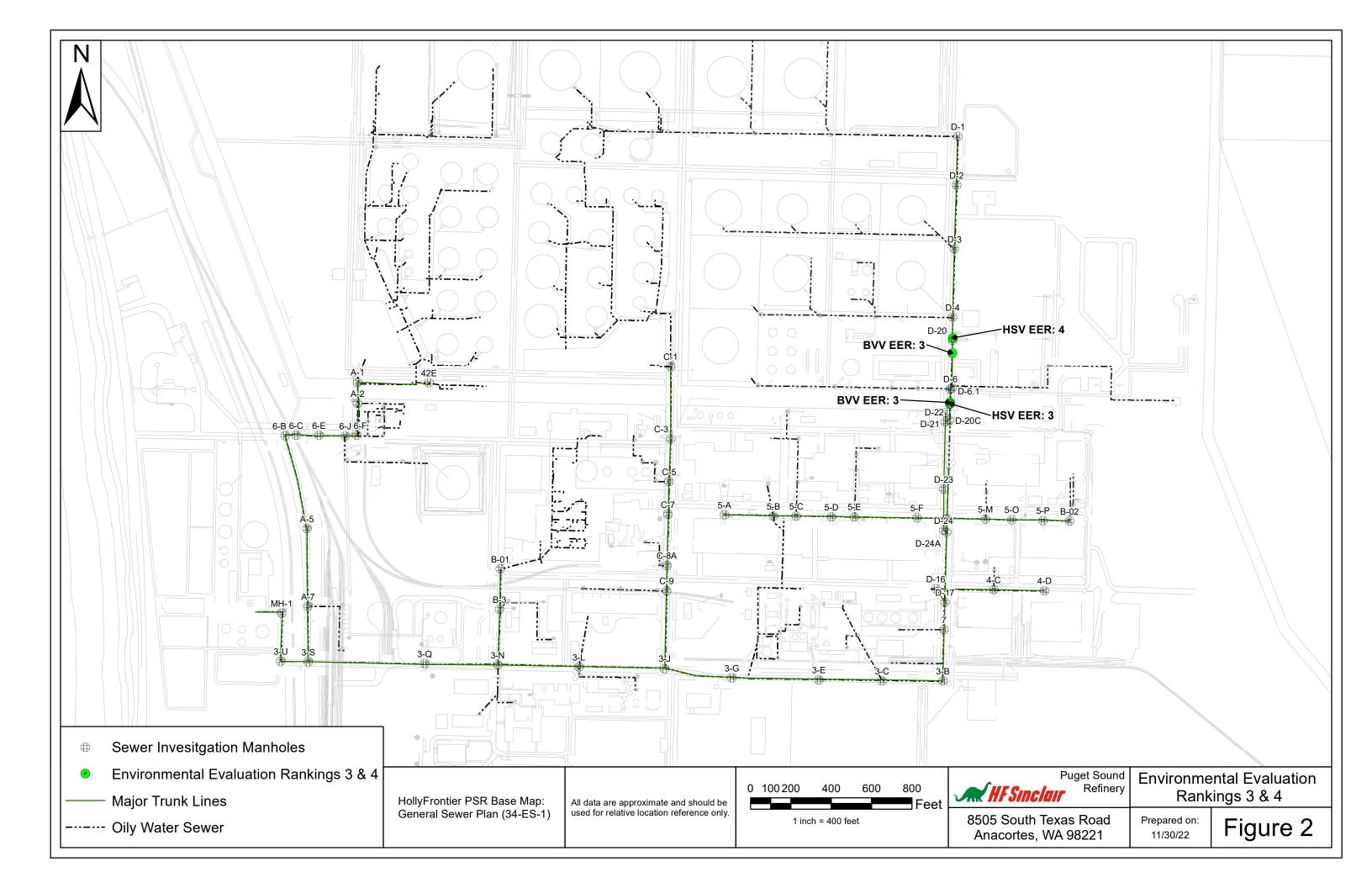
We appreciate the opportunity to assist HFSPSR with this project. If you have any questions about this report, please contact me at 360-752-9571 or elibolt@whatcomes.com

Sincerely,



Eric Libolt Professional Engineer #51580





Sewer Trunk Segment	-	Inspected Footage	Prior Company Inspection & Year
(MH to MH)	(Inch)	(Feet)	
MH D-1 to MH D-2	15	252.8	HydroChem - 2017
MH D-2 to MH D-3	15	255.8	HydroChem - 2017
MH D-3 to MH D-4	15	412	HydroChem - 2017
MH D-4 to MH D-20	15	85.5	HydroChem - 2017
MH D-6 to MH D-19	15	85	HydroChem - 2017
MH D-20 to MH D-19	15	65	HydroChem - 2017
MH B-3 to MH 3-N	10	243.7	Clean Harbors - 2019
MH 5-P to MH 5-O	21	210.1	Clean Harbors - 2018
MH D-6.1 to MH D-20	15	233.8	HydroChem - 2017
MH D-6.1 to MH D-6	15	11.6	HydroChem - 2017
MH D-22 to MH D-23	32	333.2	HydroChem - 2017

Table 1. HF Sinclair Puget Sound Refining Reviewed Sewer Segments

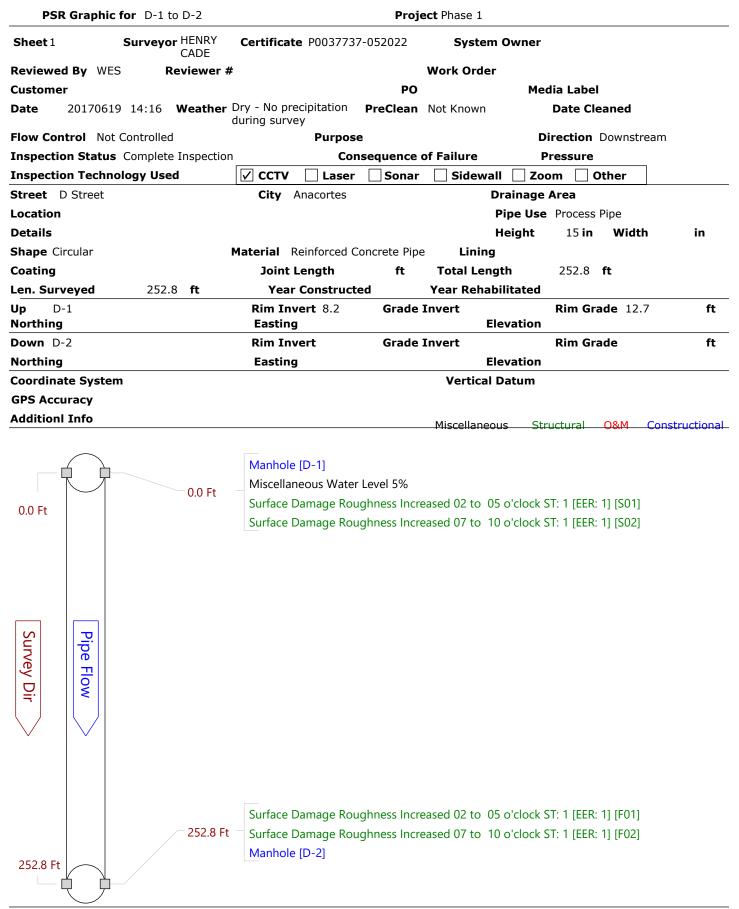
Sewer Trunk Segment (MH to MH)	NASSCO Code	EER	Location (Length (ft.)/Clock position)	Comments
MH D-4 to MH D-20 & MH D-6.1 to MH D-20	Hole Soil Visible		85.5' / 12 to 5 o'clock & 233.8' / 7 to 12 o'clock	Hole created to access Manhole D-20. Infiltration Runner Connection (IRC) from hole. The same code is in both sewer segements because both inspections end at MH D-20.
MH D-6.1 to MH D-20	Broken Void Visible	3	172.6' / 11 o'clock	Noticeably displaced pieces moved from their original position above the flow line.
MH D-6 to MH D-19	Broken Void Visible	3	69.0' / 12 o'clock	Noticeably displaced pieced moved from their original position above the flow line.
MH D-6 to MH D-19	Hole Soil Visible	3	74.0' / 12 o'clock	4 inch hole above flow line.

Table 2. HF Sinclair Puget Sound Refining Environmental Evaluation Ranking 3 and 4

APPENDIX A

Tabular, Graphic and Image Reports

Note: In the Pipe Graphic Reports there is a current a bug in the software that cuts off longer comments rather than wrapping the text. Pipelogix has been notified and once the issue is resolved Whatcom Environmental will provided updated reports. Please see the corresponding tabular report for the full comment.



Tabu	lar Re	port for D-1 to D-2			Proje	ect Phase	e 1				
Sheet 1		Surveyor HENRY CADE	Certificat	e P0037737	7-052022	Sy	stem O	wne	er		
Review	ed By	WES Reviewer #				Work O	rder				
Custom	er				PO			Ν	ledia Label		
Date	201	70619 14:16 Weather	Dry - No pro during surv		PreClean	Not Kno	wn		Date Clea	aned	
Flow Co	ntrol	Not Controlled		Purpose	e				Direction [Downstre	eam
Inspect	ion St	atus Complete Inspection		Con	sequence	of Failur	е		Pressure		
Inspect	ion Te	chnology Used	🗸 ссти	Laser	Sonar	Sid	ewall		Zoom 🗌 Ot	ther	
Street	D Str	eet	City	Anacortes			Dra	inag	ge Area		
Locatio	n						Pip	be U	se Process F	Pipe	
Details							He	ight	15 in	Width	in in
Shape (Circula	r I	Material	Reinforced C	oncrete Pipe	e Li	ning				
Coating			Joint	Length	ft	Total	Length	1	252.8	ft	
Len. Su	rveye	d 252.8 ft	Year	Construct	ed	Year R	ehabili	tate	d		
Up [Northin	D-1 g		Rim In Easting	vert 8.2	Grade	Invert	Elev	atio	Rim Gra n	de 12.7	7 ft
Down	D-2		Rim In	vert	Grade	Invert			Rim Gra	de	ft
Northin	g		Easting	J			Elev	atio	n		
Coordin	ate S	/stem				Vert	ical Da	tum			
GPS Ace	curacy	,									
Addition	nl Infe)									
					Miscellane	ous	Struct	ural	O&M		Constructional
Count	CD	Code		Val	1 Val 2	%	Jnt F	r To	Remarks		
0.0		AMH - Manhole							D-1		
0.0		MWL - Miscellaneous Wate				005					
0.0	S01	SRI - Surface Damage Rou Increased	ughness				02	2 05	EER: 1		
0.0	S02	SRI - Surface Damage Rou Increased	ughness				07	' 10	EER: 1		
252.8	F01	SRI - Surface Damage Rou Increased	ughness				02	2 05	EER: 1		
252.8	F02	SRI - Surface Damage Rou Increased	ughness				07	' 10	EER: 1		

252.8AMH - Manhole252.8ftTotal Length Surveyed

D-2

Mainline Survey Pictures o	f D-1 to D-2	Project Phase 1	
Work Order	Date 4:16 2	0170619	Sheet 1
Street D Street City Anacortes		Weather Dry-	No precipitation during survey
Location		weather bry-	to precipitation during survey
Up Node D-1	Down Node D-2		Direction Downstream
0.0	_SRI_From-02_To-05.jpg	0.0_SRI_	From-07_To-10.jpg
Date: 6/19/2017	19Jen17 20052.6'	Date: 6/19/2017	1950h177
Distance: 0 ft		Distance: 0 ft	
Obs: SRI - Surface Damage Roughness Increased		Obs: SRI - Surface Damage Roughness Increased	
Comments:		Comments:	(•) A
EER: 1		EER: 1	

PSR Graphic for D-2 to D-3						Proje	ect Phase 1				
Sheet 2		Surveyo	or HENRY CADE	Certificat	e P0037737-	-052022	System	Owner			
Reviewed	ΙВу	F	Reviewer #				Work Order				
Customer						PO		Мес	dia Label	l	
Date	20170619	9 11:39	Weather			PreClean	Not Known		Date Cle	eaned	
Flow Cont	trol Not	Controlled	d		Purpose			D	irection	Downstre	eam
Inspectio	n Status	Complete	e Inspection		Cons	sequence	of Failure	Р	ressure		_
Inspectio	n Techno	ology Use	ed	🗸 ссти	Laser	Sonar	Sidewa	ll 🗌 Zoo	om 🗌 C	Other	
Street D	Street			City /	Anacortes		[Drainage	Area		
Location								Pipe Use	Process	Pipe	
Details								Height	15 in	Width	n in
Shape Cir	cular		N	laterial F	Reinforced Co	ncrete Pipe	Lining				
Coating				Joint	Length	ft	Total Leng	yth	255.8	ft	
Len. Surv	eyed	255.	.8 ft	Year	Constructe	d	Year Rehat	oilitated			
Up D-3	2			Rim Inv		Grade			Rim Gra	ade	ft
Northing				Easting				evation			
Down D-3	3			Rim Inv		Grade			Rim Gra	ade	ft
Northing				Easting	l			evation			
Coordinat	-	n					Vertical	Datum			
GPS Accu Additionl	-										
0.0 Ft			0.0 Ft	Surface I	neous Water L Damage Roug	Jhness Incre	eased 07 to 0				vel. Came
Survey Dir	Pipe Flow		- 103.0 Ft	Miscellar Miscellar	neous Water I	₋evel 20% ∟evel 10%					
255.8 Ft			255.8 Ft	Surface I Manhole		Jhness Incre	eased 07 to 0	5 o'clock S	T: 1 [F01]		

Tabular Repo	ort for D-2 to) D-3	Project Phase 1								
Sheet 2	Certificate P0037737-052022 System										
Reviewed By	Re	eviewer #				Work Orde	er				
Customer					PO		Ме	dia Labe	I		
Date 201706	519 11:39	Weather			PreClean	Not Known		Date Cl	eaned		
Flow Control N	ot Controlled			Purpos	e		D	irection	Downstr	eam	
Inspection State	us Complete	Inspection		Con	sequence	of Failure	F	ressure			
Inspection Tech	nology Used	1	ССТУ	/ 🗌 Laser	Sonar	Sidewa	all 🗌 Zo	om 🗌 (Other]	
Street D Street			City	Anacortes			Drainage	Area		-	
Location							Pipe Use	Process	Pipe		
Details							Height	15 in	Widt	h in	
Shape Circular		I	Material	Reinforced C	oncrete Pipe	e Linin	g				
Coating			Joint	t Length	ft	Total Ler	ngth	255.8	ft		
Len. Surveyed	255.8	ft	Yea	ar Construct	ed	Year Reha	bilitated				
Up D-2 Northing			Rim Iı Eastir	nvert 8.1 ng	Grade		Elevation	Rim Gr	ade	ft	
Down D-3			Rim Iı	nvert	Grade	Invert		Rim Gr	ade	ft	
Northing			Eastir	ng		I	Elevation				
Coordinate Syst	em					Vertica	l Datum				
GPS Accuracy											
Additionl Info											
					Miccollano	ours St	ructural	09.M		Constructional	

				Miscellaneous			uctu	ral	O&M Constructional
Count	CD	Code	Val 1	Val 2	%	Jnt	Fr	То	Remarks
0.0		AMH - Manhole							D-2
0.0		MWL - Miscellaneous Water Level			010				
0.0	S01	SRI - Surface Damage Roughness Increased					07	05	EER: 1
103.0		MGO - Miscellaneous General Observation							Randomly increased flow and water level. Camera halted for appox. 10 mins.
103.0		MWL - Miscellaneous Water Level			020				
113.0		MWL - Miscellaneous Water Level			010				
255.8	F01	SRI - Surface Damage Roughness Increased					07	05	
255.8		AMH - Manhole							D-3
	<u>.</u>	Total Longth Curryoyod							

255.8 ft Total Length Surveyed

Mainline Survey Pictures	s of D-2 to D-3	F	Project Phase 1	
Work Order		Date 1:39 20170619	Sheet 2	
Street D Street				
City Anacortes			Weather	
Location				
Up Node D-2		Down Node D-3		Direction Downstream
	0.0_SRI_From-07_To-05-D.jpg		10	03.0_MWL_FromTojpg
Date: 6/19/2017	00073.e"	Date:	6/19/2017	v
Distance: 0 ft		Distanc	: e: 103 ft	
Obs: SRI - Surface Damage Roughness Increased		Obs: MWL - M Water Li	1iscellaneous evel	
Comments:		Comme	nts:	(E) A
EER: 1	From M/H/D-2 To M/H D-3			From M/H

PSR Graphic for D-3 to D-4	Project Phase 1	
Sheet 3 Surveyor HENRY CADE	Certificate P0037737-052022 System Owner	
Reviewed By Reviewer #	Work Order	
Customer	PO Media Label	
Date 20170621 13:16 Weather	PreClean Not Known Date Cleaned	
Flow Control Not Controlled	Purpose Direction Downstream	
Inspection Status Complete Inspection	Consequence of Failure Pressure	
Inspection Technology Used	CCTV Laser Sonar Sidewall Zoom Other	
Street D Street	City Anacortes Drainage Area	
Location	Pipe Use Process Pipe	
Details	Height 15 in Width	in
Shape Circular M	Material Reinforced Concrete Pipe Lining	
Coating	Joint Length ft Total Length 412.0 ft	
Len. Surveyed 412.0 ft	Year Constructed Year Rehabilitated	
Up D-3 Northing	Rim Invert8.6Grade InvertRim GradeEastingElevation	ft
Down D-4	Rim Invert 8.7 Grade Invert Rim Grade	ft
Northing	Easting Elevation	
Coordinate System	Vertical Datum	
GPS Accuracy		
Additionl Info		
0.0 Ft 9.0 Ft 9.0 Ft 21.0 Ft 201.0 Ft 201.0 Ft 247.0 Ft	 Manhole [D-3] Miscellaneous Water Level 5% Miscellaneous Water Mark 30% Surface Damage Roughness Increased 03 to 05 o'clock ST: 1 [EER: 1] [S01] Surface Damage Roughness Increased 07 to 09 o'clock ST: 1 [EER: 1] [S02] Surface Damage Roughness Increased 03 to 05 o'clock ST: 1 [EER: 1] [F01] Surface Damage Roughness Increased 07 to 09 o'clock ST: 1 [EER: 1] [F02] Surface Damage Roughness Increased 07 to 09 o'clock ST: 1 [EER: 1] [F02] Surface Damage Roughness Increased 07 to 05 o'clock ST: 1 [EER: 1] [F02] Surface Damage Roughness Increased 07 to 05 o'clock ST: 1 [EER: 1] [S03] Infil Stain Barrel 04 to 05 o'clock OM: 1 [EER: 1. Related to SAV at 247.0'] Surface Aggregate Visible 04 to 05 o'clock ST: 2 [EER: 1] 	
412.0 Ft	Surface Damage Roughness Increased 07 to 05 o'clock ST: 1 [F03] Manhole [D-4]	

Tabular Rep	ort for D-3 to D-4			Proje	ect Phase	1		
Sheet 3	Surveyor HENRY CADE	Certificate P003	7737-0	52022	Sys	stem Owner		
Reviewed By	Reviewer	#			Work O	rder		
Customer				PO		Me	edia Label	
Date 20170	0621 13:16 Weathe	r	Pi	reClean	Not Know	wn	Date Cleane	ed
Flow Control	Not Controlled	Pur	pose			I	Direction Dow	Instream
Inspection Sta	tus Complete Inspection	on	Conse	quence	of Failur	e	Pressure	
Inspection Tec	hnology Used	CCTV 🗌 La	ser	Sonar	Side	ewall 🗌 Zo	oom 🗌 Othe	r
Street D Stree	et	City Anacort	es			Drainage	e Area	· · · · ·
Location						Pipe Us	e Process Pipe	2
Details						Height	15 in V	/idth in
Shape Circular		Material Reinford	ed Conc	rete Pipe	e Lir	ning		
Coating		Joint Length		ft	Total	Length	412.0 ft	
Len. Surveyed	412.0 ft	Year Const	ructed		Year Re	ehabilitated		
Up D-3 Northing		Rim Invert 8. Easting	6	Grade	Invert	Elevation	Rim Grade	ft
Down D-4		Rim Invert 8.	7	Grade	Invert		Rim Grade	ft
Northing		Easting				Elevation		
Coordinate Sys	stem				Vert	ical Datum		
GPS Accuracy								
Additionl Info								
			М	iscellane	ous	Structural	O&M	Constructional
Count CD C	Code		Val 1	Val 2	%	Jnt Fr To F	Remarks	
0.0 A	MH - Manhole)-3	

Count		Code	vari	varz	%	JUL	Fr	10	Remarks
0.0		AMH - Manhole							D-3
0.0		MWL - Miscellaneous Water Level			005				
9.0		MWM - Miscellaneous Water Mark			030				
21.0	S01	SRI - Surface Damage Roughness Increased					03	05	EER: 1
21.0	S02	SRI - Surface Damage Roughness Increased					07	09	EER: 1
201.0	F01	SRI - Surface Damage Roughness Increased					03	05	EER: 1
201.0	F02	SRI - Surface Damage Roughness Increased					07	09	EER: 1
201.0	S03	SRI - Surface Damage Roughness Increased					07	05	EER: 1
247.0		ISB - Infil Stain Barrel					04	05	EER: 1. Related to SAV at 247.0'
247.0		SAV - Surface Aggregate Visible					04	05	EER: 1
412.0	F03	SRI - Surface Damage Roughness Increased					07	05	
412.0		AMH - Manhole							D-4
412.0	<u> </u>	Tabal Law ath Commenced							

412.0 ft Total Length Surveyed

Mainline Survey Pictures	of D-3 to D-4		Project Phase 1	
Work Order		Date 3:16 20	0170621	Sheet 3
Street D Street				
City Anacortes			Weat	her
Location				
Up Node D-3		Down Node D-4		Direction Downstream
	21.0_SRI_From-07_To-09.jpg			201.0_SRI_From-07_To-05.jpg
Date: 6/21/2017	1000	at the second	Date: 6/21/2017	0214.77
Distance: 21 ft		maint?	Distance: 201 ft	
Obs:			Obs:	
SRI - Surface Damage Roughness Increased			SRI - Surface Damage Roughness Increased	
Comments:			Comments:	
EER: 1	From M/H D-3 To M/H D-4		EER: 1	From M/H D-3 To M/H D-4

 Date:
 6/21/2017

 Distance:
 247 ft

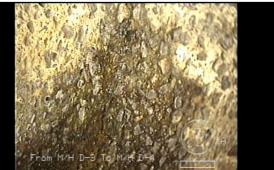
 Obs:

SAV - Surface Aggregate Visible

Comments:

EER: 1

247.0_SAV_From-04_To-05.jpg



PSR Graphic for D-4 to D-20		Project Phase 1		
Sheet 4 Surveyor HENRY CADE	Certificate P0037737-0	52022 System	Owner	
Reviewed By WES Reviewer #	WES	Work Order		
Customer		PO	Media Label	
Date 20170623 10:41 Weather	Pi	reClean Not Known	Date Cleaned	
Flow Control	Purpose		Direction Downst	ream
Inspection Status Complete Inspection	Conse	quence of Failure	Pressure	
Inspection Technology Used	CCTV Laser	Sonar Sidewall	Zoom Other	
Street D Streeet	City Anacortes	Di	rainage Area	
Location			ipe Use Process Pipe	
Details		н	leight 15 in Widt	h in
Shape Circular	Material Reinforced Cond		-	
Coating	Joint Length	ft Total Lengt	th 85.5 ft	
Len. Surveyed 85.5 ft	Year Constructed	Year Rehabi		
Up D-4 Northing	Rim Invert 8.5	Grade Invert	Rim Grade	ft
Down D-20	Easting Rim Invert	Grade Invert	Rim Grade	ft
			evation	11
Northing	Easting	Vertical D		
Coordinate System		Vertical L	atum	
GPS Accuracy Additionl Info				
0.0 Ft 0.0 Ft Pipe Flow Dir	Surface Damage Rough	Dbservation [Survery foo ness Increased 07 to 05 Dbservation [Footage sto	s Structural O&M tage is stamped D-4 to D- o'clock ST: 1 [EER: 1] [S01] ops at 56.2' and skips to 82 o'clock ST: 1 [EER: 1] [F01]	.2'. No foc
85.5 Ft	Hole Soil Visible 12 to 0 Infil Runner Connection Manhole [D-20]	-	łole is access manhole.] <mark> Runner is coming from n</mark>	nanhole.]

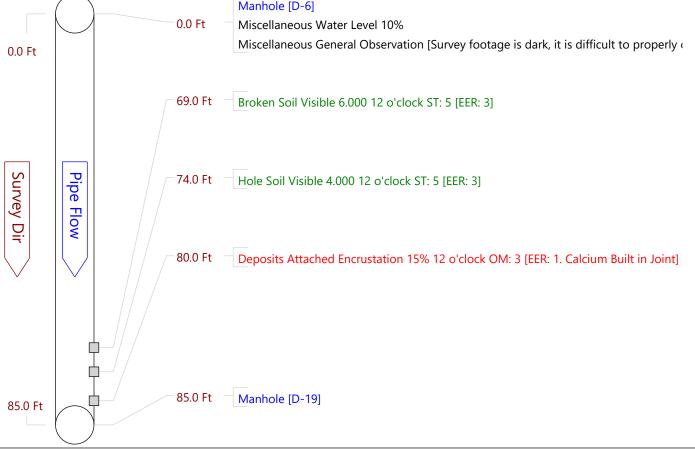
Tabular Report forD-4 to D-20		Project Phase 1		
Sheet 4 Surveyor HENRY CADE	Certificate P0037737-05	52022 System C	Owner	
Reviewed By WES Reviewer #	WES	Work Order		
Customer		PO	Media Label	
Date 20170623 10:41 Weather	Pr	eClean Not Known	Date Cleaned	
Flow Control	Purpose		Direction Downstream	
Inspection Status Complete Inspection	Consec	uence of Failure	Pressure	
Inspection Technology Used	CCTV Laser	Sonar 🗌 Sidewall	Zoom Other	
Street D Streeet	City Anacortes	Dra	ainage Area	
Location		Pi	pe Use Process Pipe	
Details		He	eight 15 in Width	in
Shape Circular N	laterial Reinforced Conc	rete Pipe Lining		
Coating	Joint Length	ft Total Lengt	h 85.5 ft	
Len. Surveyed 85.5 ft	Year Constructed	Year Rehabil	itated	
Up D-4 Northing	Rim Invert 8.5 Easting	Grade Invert Elev	Rim Grade vation	ft
Down D-20	Rim Invert	Grade Invert	Rim Grade	ft
Northing	Easting	Elev	vation	
Coordinate System		Vertical Da	atum	
GPS Accuracy				
Additionl Info				

			Miscellaneous		Stru	Structural		O&M Constructional	
Count	CD	Code	Val 1	Val 2	%	Jnt	Fr	То	Remarks
0.0		AMH - Manhole							D-4
0.0		MWL - Miscellaneous Water Level			005				
0.0		MGO - Miscellaneous General Observation							Survery footage is stamped D-4 to D-4.1 but media file is labeled D-4 to D-20.
0.0	S01	SRI - Surface Damage Roughness Increased					07	05	EER: 1
56.2		MGO - Miscellaneous General Observation							Footage stops at 56.2' and skips to 82.2'. No footage from 56.2' to 82.2'.
56.2	F01	SRI - Surface Damage Roughness Increased					07	05	EER: 1
85.5		HSV - Hole Soil Visible					12	05	EER: 4. Hole is access manhole.
85.5		IRC - Infil Runner Connection					05		EER: 2. Runner is coming from manhole.
85.5		AMH - Manhole							D-20
0	<u>6</u>	Total Longth Survoyod							

85.5 ft Total Length Surveyed

Mainline Survey Pictures of D-4 to D-20		Project Phase 1				
Work Order	Date 0:41 2017062	Sheet 4				
Street D Streeet						
City Anacortes		Weather				
Location						
Up Node D-4	Down Node D-20		Direction Downstream			
0.0_SRI_From-07_Tc	-05-E.jpg	85.5_HS	V_From-12_To-05.jpg			
Date: 6/23/2017	Date:	6/23/2017	0082 P-			
Distance: 0 ft	Dista	nce: 85.5 ft				
Obs: SRI - Surface Damage Roughness Increased	Obs: HSV -	· Hole Soil Visible				
Comments:	Comr	ments:	A COA			
EER: 1	4.1 To M/H D-	4. Hole is access ole.	From M/H D-4.1 To M/H			

PSR Graphic	for D-6 to D-19		Proje	ect Phase 1		
Sheet 5	Surveyor HENRY CADE	Certificate P0037737-0	52022	System Ow	ner	
Reviewed By HEN CAL		# P0037737-052022		Work Order		
Customer			PO		Media Label	
Date 2017071	0 11:12 Weather	Р	reClean	Not Known	Date Cleaned	
Flow Control Not	Controlled	Purpose			Direction Downstream	n
Inspection Status	Complete Inspection	Conse	quence	of Failure	Pressure	
Inspection Techn	ology Used	CCTV Laser	Sonar	Sidewall	Zoom Other	
Street D Street		City Anacortes		Drair	nage Area	
Location				Pipe	Use Process Pipe	
Details				Heig	jht 15 in Width	in
Shape Circular		Material Reinforced Con	crete Pipe	E Lining		
Coating		Joint Length	ft	Total Length	85.0 ft	
Len. Surveyed	85.0 ft	Year Constructed		Year Rehabilita	ited	
Up D-6		Rim Invert 8.0	Grade	Invert	Rim Grade	ft
Northing		Easting		Eleva	tion	
Down D-19		Rim Invert	Grade	Invert	Rim Grade	ft
Northing		Easting		Eleva	tion	
Coordinate System	n			Vertical Date	um	
GPS Accuracy						
Additionl Info				Miscellaneous	Structural O&M Co	nstructional
		Manhole [D-6]				
	0.0 Ft	Miscellaneous Water Le	evel 10%			



Tabular Report for D-6 to D-19	Pro	pject Phase 1
Sheet 5 Surveyor HENRY CADE	Certificate P0037737-052022	System Owner
Reviewed By HENRY Reviewer # CADE	P0037737-052022	Work Order
Customer	P	O Media Label
Date 20170710 11:12 Weather	PreClea	n Not Known Date Cleaned
Flow Control Not Controlled	Purpose	Direction Downstream
Inspection Status Complete Inspection	Consequence	e of Failure Pressure
Inspection Technology Used	CCTV Laser Sona	ar 🗌 Sidewall 🗌 Zoom 🗌 Other
Street D Street	City Anacortes	Drainage Area
Location		Pipe Use Process Pipe
Details		Height 15 in Width in
Shape Circular	Material Reinforced Concrete Pi	pe Lining
Coating	Joint Length ft	Total Length 85.0 ft
Len. Surveyed 85.0 ft	Year Constructed	Year Rehabilitated
Up D-6 Northing	Rim Invert 8.0 Grad Easting	e Invert Rim Grade ft Elevation
Down D-19	Rim Invert Grad	e Invert Rim Grade ft
Northing	Easting	Elevation
Coordinate System		Vertical Datum
GPS Accuracy		
Additionl Info		

			М	iscellane	ous	Stri	uctu	ral O&M Constructional
Count	CD	Code	Val 1	Val 2	%	Jnt	Fr	ToRemarks
0.0		AMH - Manhole						D-6
0.0		MWL - Miscellaneous Water Level			010			
0.0		MGO - Miscellaneous General Observation						Survey footage is dark, it is difficult to properly code the condition of the sewer walls.
69.0		BSV - Broken Soil Visible	6.0				12	EER: 3
74.0		HSV - Hole Soil Visible	4.0				12	EER: 3
80.0		DAE - Deposits Attached Encrustation			015	Х	12	EER: 1. Calcium Built in Joint
85.0		AMH - Manhole						D-19

85.0 ft Total Length Surveyed

Mainline Survey Pictures of)-6 to D-19	Project Phase 1	
Work Order	Date	1:12 20170710	Sheet 5
Street D Street			
City Anacortes		Weather	
Location			
Up Node D-6	Down Node	D-19	Direction Downstream
0.0_M	WL_FromTojpg	69.0_	_BSV_From-12_Tojpg
Date: 7/10/2017	0001.57	Date: 7/10/2017	Ballishoken South Vijiblet
Distance: 0 ft		Distance: 69 ft	
Obs:		Obs:	
MWL - Miscellaneous		BSV - Broken Soil	and the second second second
Water Level		Visible	
Comments:		Comments:	ж. ()) A .
	·· From M/H D-6 To-M/H D-19	EER: 3	

Comments:

EER: 3

74.0_HSV_From-12_To-.jpg



Date:	7/10/2017
Distance:	80 ft
Obs: DAE - Depos Encrustation	sits Attached
Comments	:

EER: 1. Calcium Built in Joint

80.0_DAE_From-12_To-.jpg



PSR Graphic for D-20 to D-19		Project Phase 1		
Sheet 6 Surveyor HENRY CADE	Certificate P0037737	-052022 System	n Owner	
Reviewed By HENRY Reviewer # CADE	P0037737-052022	Work Order		
Customer		PO	Media Label	
Date 20170712 12:38 Weather		PreClean Not Known	Date Cleaned	
Flow Control	Purpose		Direction Upstream	
Inspection Status Complete Inspection	Cons	sequence of Failure	Pressure	
Inspection Technology Used	CCTV Laser	Sonar Sidewa	ll 🗌 Zoom 🗌 Other	
Street D Street	City Anacortes	Γ	Drainage Area	
Location			Pipe Use Process Pipe	
Details			Height 15 in Width	in
Shape Circular	Material Reinforced Co	ncrete Pipe Lining	l	
Coating	Joint Length	ft Total Leng	gth 65.0 ft	
Len. Surveyed 65.0 ft	Year Constructe	d Year Rehat	pilitated	
Up D-19	Rim Invert	Grade Invert	Rim Grade	ft
Northing	Easting	E	levation	
Down D-20	Rim Invert	Grade Invert	Rim Grade	ft
Northing	Easting	E	levation	
Coordinate System		Vertical	Datum	
GPS Accuracy				
Additionl Info		Miscellaneo	ous Structural O&M C	onstructional
\bigcap	Manhole [D-20]			
	Miscellaneous Water	evel 5%		
0.0 Ft			otage is dark, it is difficult to pr	operly (
0.0 Ft		- ,	Figure 1 CT: 1 (FED: 1) (CO1)	openy

Survey Dir

65.0 Ft

Pipe Flow

65.0 Ft

Miscellaneous General Observation [Survey footage is dark, it is difficult to properly Surface Damage Roughness Increased 03 to 05 o'clock ST: 1 [EER: 1.] [S01] Surface Damage Roughness Increased 07 to 09 o'clock ST: 1 [EER: 1] [S02]

Surface Damage Roughness Increased 03 to 05 o'clock ST: 1 [EER: 1] [F01] Surface Damage Roughness Increased 07 to 09 o'clock ST: 1 [EER: 1] [F02] Manhole [D-19]

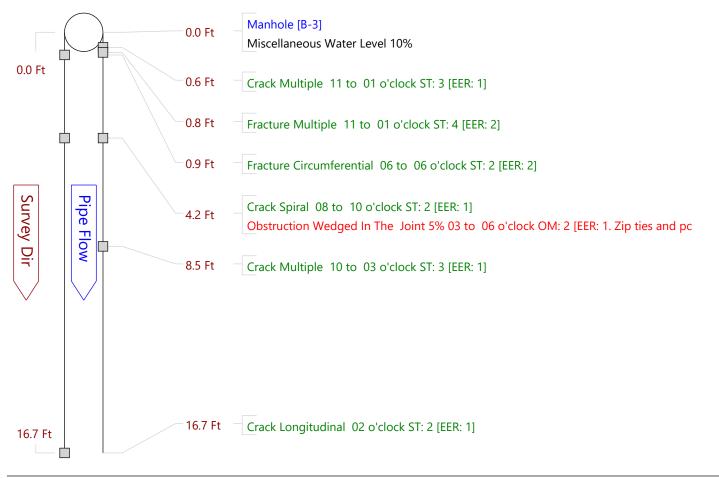
Tabular Rep	port for D-	20 to D-19		Proj	ect Phase	e 1			
Sheet 6	Surve	yor HENRY CADE	Certificate P003	7737-052022	Sy	stem Owner			
Reviewed By	HENRY CADE	Reviewer #	P0037737-05202	2	Work O	rder			
Customer				PO		Me	dia Labe	I	
Date 2017	0712 12:3	8 Weather		PreClean	Not Kno	wn	Date Cl	eaned	
Flow Control			Pur	pose		D	irection	Upstrea	m
Inspection Sta	atus Compl	ete Inspection		Consequence	of Failur	e P	ressure		
Inspection Te	chnology U	lsed	CCTV La	iser 🗌 Sonar	Sid	ewall 🗌 Zo	om 🗌 C	Other	
Street D Stre	et		City Anacort	es		Drainage	Area		
Location						Pipe Use	Process	Pipe	
Details						Height	15 in	Widt	h in
Shape Circular		P	laterial Reinford	ed Concrete Pipe	e Li	ning			
Coating			Joint Length	ft	Total	Length	65.0	ft	
Len. Surveyed	I 6	55.0 ft	Year Const	ructed	Year R	ehabilitated			
Up D-19			Rim Invert	Grade	Invert		Rim Gr	ade	ft
Northing			Easting			Elevation			
Down D-20			Rim Invert	Grade	Invert		Rim Gr	ade	ft
Northing			Easting			Elevation			
Coordinate Sy	stem				Vert	ical Datum			
GPS Accuracy									
Additionl Info									
				Miscellane	eous	Structural	O&M		Constructiona
Count CD	Codo			Val 1 Val 2	0/0	Int Fr To R	marke		

			1*1	iscenarie	Jus	Sur	ictu	ı aı	Odini Constructional
Count	CD	Code	Val 1	Val 2	%	Jnt	Fr	То	Remarks
0.0		AMH - Manhole							D-20
0.0		MWL - Miscellaneous Water Level			005				
0.0		MGO - Miscellaneous General Observation							Survey footage is dark, it is difficult to properly code the condition of the sewer walls.
0.0	S01	SRI - Surface Damage Roughness Increased					03	05	EER: 1.
0.0	S02	SRI - Surface Damage Roughness Increased					07	09	EER: 1
65.0	F01	SRI - Surface Damage Roughness Increased					03	05	EER: 1
65.0	F02	SRI - Surface Damage Roughness Increased					07	09	EER: 1
65.0		AMH - Manhole							D-19
65.0	£+	Total Longth Survoyod							ł

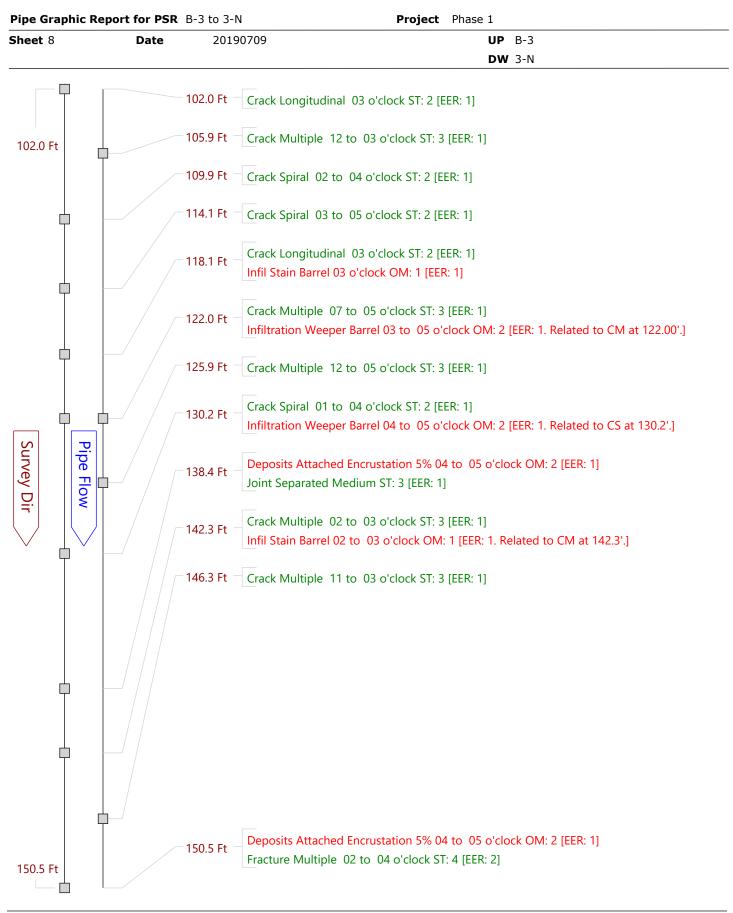
65.0 ft Total Length Surveyed

Mainline Survey Picture	s of D-20 to D-19		Project Phase 1	
Work Order		Date 2:3	8 20170712	Sheet 6
Street D Street				
City Anacortes	5		Weather	
Location				
Up Node D-19		Down Node D	-20	Direction Upstream
	0.0_SRI_From-07_To-09	.jpg	0.0_	_SRI_From-03_To-05.jpg
Date: 7/12/2017	1134347	21:34 0007,6'	Date: 7/12/2017	11Ju117 21:34 0022.1*
Distance: 0 ft	$\frac{2\pi}{2}$		Distance: 0 ft	
Obs: SRI - Surface Damage Roughness Increased		•	Obs: SRI - Surface Damage Roughness Increased	
Comments:		() A	Comments:	Mark and De-
EER: 1			EER: 1.	

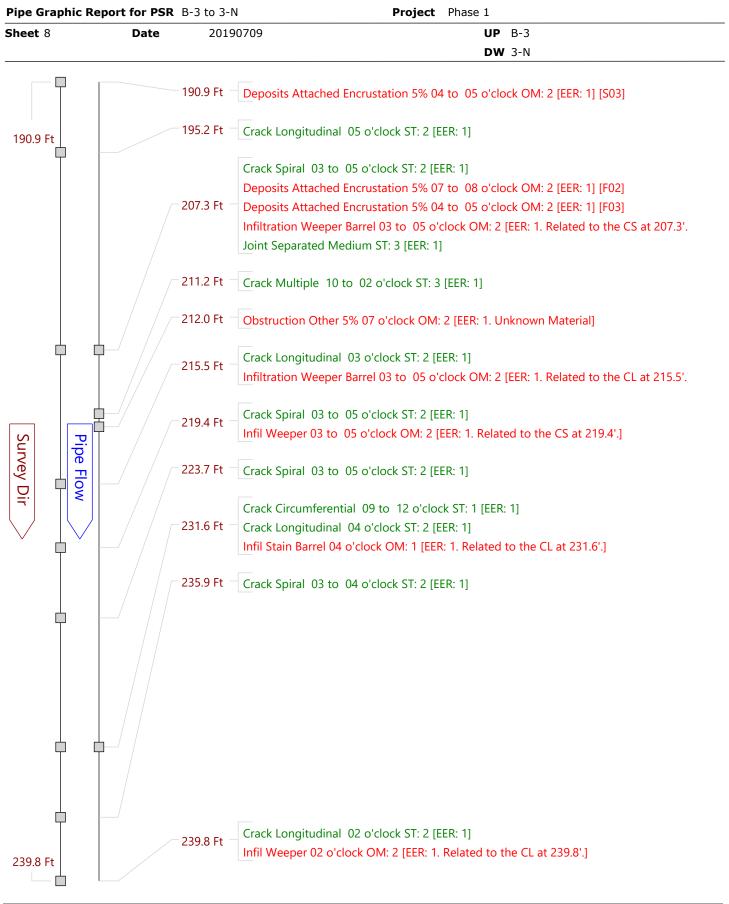
PSR Graphic	c for B-3 to 3-N		Proje	ect Phase 1		
Sheet 8	Surveyor HENRY CADE	Certificate P0037737-	052022	System Ov	vner	
Reviewed By	Reviewer #	÷		Work Order		
Customer			PO		Media Label	
Date 2019070	9 11:15 Weather	I	PreClean	Not Known	Date Cleaned	
Flow Control		Purpose			Direction Downstre	eam
Inspection Status	s Complete Inspection	Cons	equence o	of Failure	Pressure	
Inspection Techn	ology Used	CCTV Laser	Sonar	Sidewall	Zoom Other	
Street B Street		City Anacortes		Drai	nage Area	
Location				Pipe	e Use Process Pipe	
Details				Hei	ght 10 in Width	n in
Shape Circular		Material Reinforced Co	ncrete Pipe	Lining		
Coating		Joint Length	ft	Total Length	243.7 ft	
Len. Surveyed	243.7 ft	Year Constructed	d	Year Rehabilita	ated	
Up B-3		Rim Invert	Grade	Invert	Rim Grade	ft
Northing		Easting		Eleva	tion	
Down 3-N		Rim Invert	Grade	Invert	Rim Grade	ft
Northing		Easting		Eleva	tion	
Coordinate Syste	m			Vertical Dat	um	
GPS Accuracy						
Additionl Info						
				Miscellaneous	Structural O&M	Constructional



Pipe Graphic Report f			
Sheet 8	Date 2019	00709 UP B-3	
		DW 3-N	
	20.6 Ft	Crack Longitudinal 12 o'clock ST: 2 [EER: 1]	
20.6 Ft	25.5 Ft	Crack Longitudinal 02 o'clock ST: 2 [EER: 1]	
	- 33.1 Ft	Crack Spiral 11 to 12 o'clock ST: 2 [EER: 1]	
	37.4 Ft	Crack Longitudinal 12 o'clock ST: 2 [EER: 1]	
	41.0 Ft	Crack Longitudinal 03 o'clock ST: 2 [EER: 1]	
	- 49.2 Ft -	Crack Spiral 01 to 03 o'clock ST: 2 [EER: 1]	
	- 53.1 Ft -	Crack Multiple 03 to 04 o'clock ST: 3 [EER: 1] Crack Spiral 09 to 12 o'clock ST: 2 [EER: 1]	
	61.0 Ft	Crack Longitudinal 03 o'clock ST: 2 [EER: 1]	
	01.0 Ft	Crack Spiral 02 to 03 o'clock ST: 2 [EER: 1]	
Pipe Flow Survey Dir	73.0 Ft	Crack Multiple 09 to 05 o'clock ST: 3 [EER: 1]	
	77.7 Ft	Crack Longitudinal 01 o'clock ST: 2 [EER: 1]	
	82.3 Ft	Crack Spiral 02 to 04 o'clock ST: 2 [EER: 1]	
	93.8 Ft	Crack Spiral 03 to 05 o'clock ST: 2 [EER: 1]	
98.1 Ft	98.1 Ft	Crack Multiple 03 to 05 o'clock ST: 3 [EER: 1]	



	or PSR B-3 to 3-N	
heet 8	Date 2019070	
		DW 3-N
	150.5 Ft In	filtration Weeper Barrel 04 o'clock OM: 2 [EER: 1. Related to FM at 150.5'.]
150.5 Ft	155.5 FL	ack Longitudinal 10 o'clock ST: 2 [EER: 1] eposits Attached Encrustation 10% 04 to 05 o'clock OM: 2 [EER: 1] [S01]
	- 158.4 Ft - Cr In	ack Spiral 02 to 05 o'clock ST: 2 [EER: 1] ack Spiral 07 to 09 o'clock ST: 2 [EER: 1] filtration Weeper Barrel 03 to 05 o'clock OM: 2 [EER: 1. Related to CS at 184.4'.] filtration Weeper Barrel 07 to 09 o'clock OM: 2 [EER: 1. Related to the CS 158.4',]
	/ 162.7 Ft -	ack Longitudinal 03 o'clock ST: 2 [EER: 1] fil Stain Barrel 03 o'clock OM: 1 [EER: 1. Related to the CL at 162.7'.]
	- 167.3 Ft - Cr	ack Spiral 03 to 05 o'clock ST: 2 [EER: 1] filtration Weeper Barrel 03 to 05 o'clock OM: 2 [EER: 1. Related to the CS at 167.3'.
	- 170.9 Ft - De	eposits Attached Encrustation 10% 04 to 05 o'clock OM: 2 [EER: 1] [F01]
Surv	1/4.5 Ft	ack Spiral 02 to 05 o'clock ST: 2 [EER: 1] filtration Weeper Barrel 03 to 05 o'clock OM: 2 [EER: 1. Related to CS at 174.5'.]
Pipe Flow Survey Dir	- 1/8.8 FT	ack Longitudinal 03 o'clock ST: 2 [EER: 1] fil Stain Barrel 03 o'clock OM: 1 [EER: 1. Related to the CL at 178.8'.]
	180.0 Ft	ack Circumferential 08 to 09 o'clock ST: 1 [EER:1] eposits Ingressed Fine 5% 07 to 08 o'clock OM: 2 [EER: 1. Related to the CC at 180. filtration Weeper Barrel 08 to 09 o'clock OM: 2 [EER: 1. Related to the CC at 180.0'.
187.8 Ft	- 187.8 Ft - De	ack Spiral 02 to 05 o'clock ST: 2 [EER: 1] eposits Attached Encrustation 5% 07 to 08 o'clock OM: 2 [EER: 1] [S02] filtration Weeper Barrel 04 to 05 o'clock OM: 2 [EER: 1. Related to the CS at 187.8'.



ipe Graphic Re heet 8	Date	20190709	Project Phase 1 UP B-3	
			DW 3-N	
243.7 Ft		243.7 Ft – Joint Offset Medium Manhole [3-N]	ST: 3 [EER: 2. At Acess Manhole]	
Pipe Flow				
43.7 Ft				

Tabular Repor	t for B-3 to 3-N	Project Phase 1				
Sheet 8	Surveyor HENRY CADE	Certificate P003773	37-052022	System (Dwner	
Reviewed By	Reviewer #	ŧ		Work Order		
Customer			PO		Media Label	
Date 201907	09 11:15 Weather		PreClean	Not Known	Date Cleaned	
Flow Control		Purpos	se		Direction Downstream	
Inspection Statu	s Complete Inspection	n Co	nsequence	of Failure	Pressure	
Inspection Tech	nology Used	CCTV Lase	sonar	Sidewall	Zoom Other	
Street B Street		City Anacortes		Dr	ainage Area	
Location				Pi	ipe Use Process Pipe	
Details				H	eight 10 in Width	in
Shape Circular		Material Reinforced	Concrete Pipe	e Lining	-	
Coating		Joint Length	ft	Total Lengt	h 243.7 ft	
Len. Surveyed	243.7 ft	Year Construc	ted	Year Rehabil	litated	
Up B-3		Rim Invert	Grade	Invert	Rim Grade	ft
Northing		Easting		Ele	vation	
Down 3-N		Rim Invert	Grade	Invert	Rim Grade	ft
Northing		Easting		Ele	vation	
Coordinate Syste	em			Vertical D	atum	
GPS Accuracy						
Additionl Info						

			Miscellaneous		Structural			O&M Constructional	
Count	CD	Code	Val 1	Val 2	%	Jnt	Fr	То	Remarks
0.0		AMH - Manhole							B-3
0.0		MWL - Miscellaneous Water Level			010				
0.6		CM - Crack Multiple				Х	11	01	EER: 1
0.8		FM - Fracture Multiple					11	01	EER: 2
0.9		FC - Fracture Circumferential					06	06	EER: 2
4.2		CS - Crack Spiral				Х	08	10	EER: 1
4.2		OBJ - Obstruction Wedged In The Joint			005	X	03	06	EER: 1. Zip ties and possibly a dead vermin. Unclear.
8.5		CM - Crack Multiple				Х	10	03	EER: 1
16.7		CL - Crack Longitudinal				Х	02		EER: 1
20.6		CL - Crack Longitudinal				Х	12		EER: 1
25.5		CL - Crack Longitudinal				Х	02		EER: 1
33.1		CS - Crack Spiral				Х	11	12	EER: 1
37.4		CL - Crack Longitudinal				Х	12		EER: 1
41.0		CL - Crack Longitudinal				Х	03		EER: 1
49.2		CS - Crack Spiral				Х	01	03	EER: 1
53.1		CM - Crack Multiple				Х	03	04	EER: 1
53.1		CS - Crack Spiral				Х	09	12	EER: 1
61.0		CL - Crack Longitudinal				Х	03		EER: 1
61.0		CS - Crack Spiral				Х	02	03	EER: 1
73.0		CM - Crack Multiple				Х	09	05	EER: 1
77.7		CL - Crack Longitudinal				Х	01		EER: 1
82.3		CS - Crack Spiral				Х	02	04	EER: 1
93.8		CS - Crack Spiral				Х	03	05	EER: 1
98.1		CM - Crack Multiple				Х	03	05	EER: 1
102.0		CL - Crack Longitudinal				Х	03		EER: 1

		Weat	her				
Location ID Node B-3 105.9 109.9 114.1 118.1 118.1	on B Down Node CM - Crack Multiple		her				
Ip Node B-3 105.9 109.9 114.1 118.1 118.1 118.1	Down Node CM - Crack Multiple	2 N					
105.9 109.9 114.1 118.1 118.1	CM - Crack Multiple	2 1					
105.9 109.9 114.1 118.1 118.1	CM - Crack Multiple	3-N					Direction Downstream
114.1 118.1 118.1				Х	12	03	EER: 1
118.1 118.1				Х	02	04	EER: 1
118.1 118.1	CS - Crack Spiral			Х	-		EER: 1
	CL - Crack Longitudinal			X	03		EER: 1
122.0	ISB - Infil Stain Barrel			Х	03		EER: 1
	CM - Crack Multiple			X			EER: 1
122.0	IWB - Infiltration Weeper Barrel			X	-		EER: 1. Related to CM at 122.00'.
125.9	CM - Crack Multiple			X	-		EER: 1
130.2	CS - Crack Spiral			X	-		EER: 1
130.2	IWB - Infiltration Weeper Barrel			X			EER: 1. Related to CS at 130.2'.
138.4	DAE - Deposits Attached Encrustation		005	Х			EER: 1
138.4	JSM - Joint Separated Medium						EER: 1
142.3	CM - Crack Multiple			X	02		EER: 1
142.3	ISB - Infil Stain Barrel			X	-		EER: 1. Related to CM at 142.3'.
146.3	CM - Crack Multiple			Х	11	03	EER: 1
150.5	DAE - Deposits Attached Encrustation		005	X			EER: 1
150.5	FM - Fracture Multiple			Х		-	EER: 2
150.5	IWB - Infiltration Weeper Barrel			X	04	-	EER: 1. Related to FM at 150.5'.
153.5	CL - Crack Longitudinal			Х	10		EER: 1
	DAE - Deposits Attached Encrustation		010	Х	04	05	EER: 1
158.4	CS - Crack Spiral					_	EER: 1
158.4	CS - Crack Spiral			Х	07	09	EER: 1
158.4	IWB - Infiltration Weeper Barrel			Х		_	EER: 1. Related to CS at 184.4'.
158.4	IWB - Infiltration Weeper Barrel			Х			EER: 1. Related to the CS 158.4',
162.7	CL - Crack Longitudinal			Х	03		EER: 1
162.7	ISB - Infil Stain Barrel				03		EER: 1. Related to the CL at 162.7'.
167.3	CS - Crack Spiral			Х	03	05	EER: 1
167.3	IWB - Infiltration Weeper Barrel				03	05	EER: 1. Related to the CS at 167.3'.
170.9 F01	DAE - Deposits Attached Encrustation		010	Х	-		EER: 1
174.5	CS - Crack Spiral			Х			EER: 1
174.5	IWB - Infiltration Weeper Barrel			Х			EER: 1. Related to CS at 174.5'.
178.8	CL - Crack Longitudinal			Х	03		EER: 1
178.8	ISB - Infil Stain Barrel			X	03		EER: 1. Related to the CL at 178.8'.
180.0	CC - Crack Circumferential						EER:1
180.0	DNF - Deposits Ingressed Fine		005				EER: 1. Related to the CC at 180.0'.
180.0	IWB - Infiltration Weeper Barrel						EER: 1. Related to the CC at 180.0'.
187.8	CS - Crack Spiral			Х			EER: 1
187.8 S02	DAE - Deposits Attached Encrustation		005	Х			EER: 1
187.8	IWB - Infiltration Weeper Barrel			X			EER: 1. Related to the CS at 187.8'.
190.9 S03 195.2	DAE - Deposits Attached Encrustation CL - Crack Longitudinal		005	X X	04 05		EER: 1 EER: 1

	Tabular Report for B-3 to 3-N		Pro	oject Ph	ase				
Worl	Work Order		C	ate1:1	5 20	Sheet 8			
	Stre	et B Street							
	Ci	ty Anacortes		Weathe	r				
Lo	ocatio	on							
Up Nod	e B-3	3 Down	n Node	3-N					Direction Downstream
207.3		CS - Crack Spiral				Х	03	05	EER: 1
207.3	F02	DAE - Deposits Attached Encrustation			005	Х	07	08	EER: 1
207.3	F03	DAE - Deposits Attached Encrustation			005	Х	04		EER: 1
207.3		IWB - Infiltration Weeper Barrel				X	03		EER: 1. Related to the CS at 207.3'.
207.3		JSM - Joint Separated Medium							EER: 1
211.2		CM - Crack Multiple				X	10	02	EER: 1
212.0		OBZ - Obstruction Other			005		07		EER: 1. Unknown Material
215.5		CL - Crack Longitudinal				X	03		EER: 1
215.5		IWB - Infiltration Weeper Barrel				X	03		EER: 1. Related to the CL at 215.5'.
219.4		CS - Crack Spiral							EER: 1
219.4		IW - Infil Weeper				X	03		EER: 1. Related to the CS at 219.4'.
223.7		CS - Crack Spiral				X	03	05	EER: 1
231.6		CC - Crack Circumferential					09	12	EER: 1
231.6		CL - Crack Longitudinal					04		EER: 1
231.6		ISB - Infil Stain Barrel					04		EER: 1. Related to the CL at 231.6'.
235.9		CS - Crack Spiral				Х	03	04	EER: 1
239.8		CL - Crack Longitudinal				Х	02		EER: 1
239.8		IW - Infil Weeper				Х	02		EER: 1. Related to the CL at 239.8'.
243.7		JOM - Joint Offset Medium							EER: 2. At Acess Manhole
243.7		AMH - Manhole							3-N

243.7 ft Total Length Surveyed

Mainline Survey Pictures of B-3 to 3-N			Project Phase 1	
Work Order		Date 1:15 2	0190709	Sheet 8
Street B Street				
City Anacortes			Weather	
Location				
Up Node B-3		Down Node 3-N		Direction Downstream
0.	6_CM_From-11_To-01.jpg		0.8_FM	1_From-11_To-01.jpg
Date: 7/09/2019	@Atlas Inspection		Date: 7/09/2019	@Atlas Inspection
Distance: 0.6 ft			Distance: 0.8 ft	
Obs: CM - Crack Multiple			Obs: FM - Fracture Multiple	P
Comments:			Comments:	
EER: 1	04:48 07.09.19	LC1: + 0000.60 ft	EER: 2	04: 48 07. 09. 19 LC1: + 0000.90 ft

 Date:
 7/09/2019

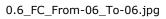
 Distance:
 0.9 ft

 Obs:
 FC - Fracture

 Circumferential
 Keiter

Comments:

EER: 2





Date:	7/09/2019
Distance:	4.2 ft
Obs: CS - Crack S	Spiral

Comments:

EER: 1

4.2_CS_From-08_To-10.jpg



Mainline Survey Picture	es of B-3 to 3-N	Р	roject Phase 1		
Work Order	Work Order Date 1:15 20190709				Sheet 8
Street B Street					
City Anacorte	S		Weather		
Location					
Up Node B-3		Down Node 3-N		Dire	ection Downstream
	4.2_OBJ_From-03_To-06.jpg		8.	5_CM_From-10_To-03.jpg	
Date: 7/09/2019 Distance: 4.2 ft	©Atlas Inspection	Date: Distance	7/09/2019 e: 8.5 ft	@Atlas Inspection	
Obs: OBJ - Obstruction Wedged In The Joint		Obs: CM - Cra	ck Multiple		
Comments:	mar and	Commer	nts:		14 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
EER: 1. Zip ties and possibly a dead vermin. Unclear.	04:48 07.09.19	LC1:+0003.90 ft EER: 1		04: 49 07. 09. 19	LC1: + 0008.50 ft

 Date:
 7/09/2019

 Distance:
 16.7 ft

 Obs:
 16.7 ft

CL - Crack Longitudinal

Comments:

EER: 1



Date:	7/09/2019
Distance:	20.6 ft
Obs: CL - Crack I	Longitudinal

Comments:

EER: 1





Mainline Survey Pictures of	rvey Pictures of B-3 to 3-N Project Phase 1				
Work Order	Date 1:15 20190709				Sheet 8
Street B Street					
City Anacortes			Weather		
Location					
Up Node B-3		Down Node 3-N		Direct	ion Downstream
25	5.5_CL_From-02_Tojpg		33.	1_CS_From-11_To-12.jpg	
Date: 7/09/2019	Gatlas Inspection	Date	e: 7/09/2019	OAtlas Inspection	1
Distance: 25.5 ft		Dista	ance: 33.1 ft	1	
Obs: CL - Crack Longitudinal		Obs:	: Crack Spiral		
Comments:		Com	ments:		
FFR: 1	04:50 07.09.19	LC1: + 0025.50 ft FER:	1	04:51 07.09.19	LC1: + 0033.10 ft

 Date:
 7/09/2019

 Distance:
 37.4 ft

 Obs:
 CL - Crack Longitudinal

Comments:

EER: 1



Date:	7/09/2019
Distance:	41 ft
Obs: CL - Crack L	ongitudinal

Comments:

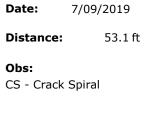
EER: 1

41.0_CL_From-03_To--A.jpg



Mainline Survey Pictures	of B-3 to 3-N	Project Phase 1	
Work Order	Date 1:15	20190709	Sheet 8
Street B Street			
City Anacortes		Weather	
Location			
Up Node B-3	Down Node 3-N		Direction Downstream
4	9.2_CS_From-01_To-03.jpg	53.1_CM_From-	03_To-04.jpg
Date: 7/09/2019	Atlas Inspection	Date: 7/09/2019	pection
Distance: 49.2 ft		Distance: 53.1 ft	
Obs: CS - Crack Spiral		Obs: CM - Crack Multiple	
Comments:		Comments:	
FFR: 1	04: 52 07. 09. 19 LC1: + 0049.20 ft	EER: 1 04:53 07.0	19.19 LC1: + 0053.10 ft

53.1_CS_From-09_To-12.jpg



Comments:

EER: 1



Date: 7/09/2019 Distance: 61 ft Obs: CL - Crack Longitudinal

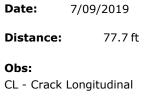
Comments:

EER: 1

61.0_CL_From-03_To-.jpg



Mainline Survey Pictures	s of B-3 to 3-N		Project Phase 1	
Work Order		Date 1:15 2	Sheet 8	
Street B Street				
City Anacortes			Weather	
Location				
Up Node B-3		Down Node 3-N		Direction Downstream
	61.0_CS_From-02_To-03.jpg		73.	.0_CM_From-09_To-05.jpg
Date: 7/09/2019	O Atlas Inspection		Date: 7/09/2019	@Atlas Inspection
Distance: 61 ft			Distance: 73 ft	
Obs: CS - Crack Spiral			Obs: CM - Crack Multiple	
Comments:	A start		Comments:	
EER: 1	04: 55 07. 09. 19	LC1: + 0069.50 ft	EER: 1	04: 57 07. 09. 19 LC1: + 0073.40 ft



Comments:

EER: 1



Date: 7/09/2019 Distance: 82.3 ft Obs: CS - Crack Spiral

Comments:

EER: 1

82.3_CS_From-02_To-04.jpg



Mainline Survey Picture	s of B-3 to 3-N	Project Phase 1		
Work Order	Date 1:1	Date 1:15 20190709 She		
Street B Street				
City Anacortes	5	Weather		
Location				
Up Node B-3	Down Node 3-	-N	Dire	ction Downstream
	82.3_CS_From-03_To-05.jpg	9	8.1_CM_From-03_To-05.jpg	
Date: 7/09/2019	@Atlas Inspection	Date: 7/09/2019	G Atlas Inspection	-
Distance: 93.8 ft	· ·	Distance: 98.1 ft	1	C
Obs:		Obs:		
CS - Crack Spiral	the second second	CM - Crack Multiple		
Comments:	for the second	Comments:	A state	
EER: 1	04: 58 07. 09. 19 LC1: + 0093.80 ft	EER: 1	04: 59 07. 09. 19	LC1: + 0098.10 ft

Date: 7/09/2019 102 ft Distance: Obs: CL - Crack Longitudinal

Comments:

EER: 1





Comments:

EER: 1

105.9_CM_From-12_To-03.jpg



Mainline Survey Picture	s of B-3 to 3-N		Project Phase 1		
Work Order		Date 1:15 20190709			
Street B Street					
City Anacortes	5	Weather			
Location					
Up Node B-3		Down Node 3-N		Direction Downstream	
	109.9_CS_From-02_To-04.jpg		:	114.1_CS_From-03_To-05.jpg	
Date: 7/09/2019	O Atlas Inspection		Date: 7/09/2019	@Atlas Inspection	
Distance: 109.9 ft	•		Distance: 114.1 ft		
Obs:	The second		Obs:		
CS - Crack Spiral			CS - Crack Spiral		
Comments:			Comments:		
EER: 1	05:00 07.09.19	LC1: + 0109.90 ft	EER: 1	05: 00 07. 09. 19 LC1: + 0114.10 ft	

 Date:
 7/09/2019

 Distance:
 118.1 ft

 Obs:
 CL - Crack Longitudinal

Comments:

EER: 1





Date:	7/09/2019
Distance:	118.1 ft
Obs: ISB - Infil S	tain Barrel

Comments:

EER: 1





Mainline Survey Picture	s of B-3 to 3-N	Proje	ect Phase 1		
Work Order		Date 1:15 20190709 Sheet			Sheet 8
Street B Street					
City Anacortes	5		Weather	r	
Location					
Up Node B-3	C	Down Node 3-N		C	Direction Downstream
	122.0_CM_From-07_To-05.jpg		1	.22.0_IWB_From-03_To-0	5.jpg
Date: 7/09/2019	(Atlas Inspection	Date:	7/09/2019	GAtlas Inspection	
Distance: 122 ft		Distance:	122 ft	1	
Obs: CM - Crack Multiple		Obs: IWB - Infiltra Weeper Barre			
Comments:		Comments:			He to stilling
EER: 1	05: 01 07. 09. 19 Li	C1:+0122.00 ft EER: 1. Relat at 122.00'.	ed to CM:	05:01 07.09.19	LC1:+0122.00 ft

Date: 7/09/2019 125.9 ft Distance: Obs: CM - Crack Multiple

Comments:

EER: 1



Date: 7/09/2019 Distance: 130.2 ft Obs: CS - Crack Spiral

Comments:

EER: 1

130.2_CS_From-01_To-04.jpg



Mainline Survey Pictures	of B-3 to 3-N	Project Phase 1		
Work Order	Da	ate 1:15 20190709		Sheet 8
Street B Street				
City Anacortes		Weathe	r	
Location				
Up Node B-3	Down No	de 3-N	Direc	tion Downstream
1	138.4_DAE_From-04_To-05.jpg	:	138.4_JSM_FromTojpg	
Date: 7/09/2019	@Atlas Inspection	Date: 7/09/2019	@Atlas Inspection	
Distance: 138.4 ft		Distance: 138.4 ft		J G
Obs: DAE - Deposits Attached Encrustation		Obs: JSM - Joint Separated Medium		
Comments:		Comments:		
EER: 1	05: 02 07. 09. 19 LC1: +0138.10 ft	EER: 1	05: 02 07. 09. 19	LC1: + 0138.40 ft

 Date:
 7/09/2019

 Distance:
 142.3 ft

Obs: CM - Crack Multiple

Comments:

EER: 1

142.3_CM_From-02_To-03.jpg



 Date:
 7/09/2019

 Distance:
 142.3 ft

 Obs:
 ISB - Infil Stain Barrel

Comments:

EER: 1. Related to CM at 142.3'.

142.3_ISB_From-02_To-03.jpg



Mainline Survey Picture	es of B-3 to 3-N		Project Phase 1		
Work Order		Date 1:15 20190709			Sheet 8
Street B Street					
City Anacorte	25		Weath	her	
Location					
Up Node B-3		Down Node 3-N			Direction Downstream
	146.3_CM_From-11_To-03.jpg			149.9_DAE_From-04_To	o-05.jpg
Date: 7/09/2019	Atlas Inspection	1 (2)	Date: 7/09/2019	Catlas Inspection	
Distance: 146.3 ft	1	* (3)	Distance: 150.5 ft	-	·
Obs: CM - Crack Multiple			Obs: DAE - Deposits Attached Encrustation		and and
Comments:			Comments:		
EER: 1	05:03 07.09.19	LC1: + 0146.30 ft	EER: 1	05:03 07.09.19	LC1: +0149.90 ft

7/09/2019 Date: 150.5 ft Distance: Obs:

FM - Fracture Multiple

Comments:

EER: 2



7/09/2019 Date: Distance: 150.5 ft Obs: IWB - Infiltration Weeper Barrel Comments:

EER: 1. Related to FM at 150.5'.

150.5_IWB_From-04_To-.jpg



Mainline Survey Picture	s of B-3 to 3-N		Project Phase 1		
Work Order		Date 1:15 20190709			Sheet 8
Street B Street					
City Anacortes	5		Weathe	r	
Location					
Up Node B-3	C	Down Node 3-N		Direc	tion Downstream
	153.5_CL_From-10_Tojpg		1	.53.5_DAE_From-04_To-05.jpg	3
Date: 7/09/2019	CAtlas Inspection	Date:	7/09/2019	CAtlas Inspection	
Distance: 153.5 ft		Distan	ce: 153.5 ft	and the second se	\mathbb{P}
Obs:		Obs:		- (5)	m.
CL - Crack Longitudinal		DAE - D Encrust	Deposits Attached ation	A second second	
Comments:		Comme	ents:		Maria
EER: 1	05: 04 07. 09. 19	C1: + 0154.50 ft EER: 1		05:04 07.09.19	LC1: + 0153.50 ft



Comments:

EER: 1





Comments:

EER: 1

158.4_CS_From-07_To-09.jpg



Mainline Survey Picture	es of B-3 to 3-N	Project Phase 1	
Work Order	Date 1:15	20190709	Sheet 8
Street B Street			
City Anacorte	S	Weather	
Location			
Up Node B-3	Down Node 3-N		Direction Downstream
	158.4_IWB_From-07_To-09.jpg	162.7_	_CL_From-03_Tojpg
Date: 7/09/2019	@Atlas Inspection	Date: 7/09/2019	@Atlas Inspection
Distance: 158.4 ft		Distance: 162.7 ft	
Obs:		Obs:	and the second s
IWB - Infiltration Weeper Barrel		CL - Crack Longitudinal	
Comments:	And and a second se	Comments:	
EER: 1. Related to the CS 158.4',	05: 04 07. 09. 19 LC1: + 0158.40 ft	EER: 1	05: 05 07. 09. 19 LC1: + 0162.70 ft

7/09/2019

Distance: 167.3 ft

Obs: CS - Crack Spiral

Comments:

EER: 1

Date:





Comments:

EER: 1

174.5_CS_From-02_To-05.jpg



Mainline Survey Pictures of	B-3 to 3-N		Proje	ct Phase 1		
Work Order	Date 1:15 20190709				Sheet 8	
Street B Street						
City Anacortes				Weath	ner	
Location						
Up Node B-3		Down Node 3-N			Directio	on Downstream
174.5	_IWB_From-03_To-05.jpg				178.8_CL_From-03_Tojpg	
Date: 7/09/2019	🚱 Atlas Inspection	\cap	Date:	7/09/2019	Atlas Inspection	\wedge
Distance: 174.5 ft	1/ 1/2	9	Distance:	178.8 ft	1 THE WAY	
Obs:			Obs:			
IWB - Infiltration Weeper Barrel			CL - Crack Lo	ongitudinal		
Comments:			Comments:		and the second of the	
EER: 1. Related to CS at 174.5'.	05:06 07.09.19	LC1: + 0174.80 ft	EER: 1		05:06 07.09.19	LC1: + 0178.40 ft

 Date:
 7/09/2019

 Distance:
 178.8 ft

 Obs:

ISB - Infil Stain Barrel

Comments:

EER: 1. Related to the CL at 178.8'.



Date:	7/09/2019
Distance:	180 ft
Obs: CC - Crack Circumferer	ntial
Comments	:

EER:1

180.0_CC_From-08_To-09.jpg



Mainline Survey Pictures	of B-3 to 3-N	Project Phase 1	
Work Order	Date 1:15 2	Sheet 8	
Street B Street			
City Anacortes		Weather	
Location			
Up Node B-3	Down Node 3-N		Direction Downstream
1	.80.0_DNF_From-07_To-08.jpg	187	'.8_CS_From-02_To-05.jpg
Date: 7/09/2019	CAtlas Inspection	Date: 7/09/2019	@Atlas Inspection
Distance: 180 ft		Distance: 187.8 ft	
Obs:		Obs:	
DNF - Deposits Ingressed Fine		CS - Crack Spiral	
Comments:		Comments:	
EER: 1. Related to the CC at 180.0'.	05: 06 07. 09. 19 LC1: + 0178.80 ft	EER: 1	05: 07 07. 09. 19

 Date:
 7/09/2019

 Distance:
 187.8 ft

Obs:

DAE - Deposits Attached Encrustation

Comments:

EER: 1



Date: 7/09/2019 Distance: 190.9 ft Obs: DAE - Deposits Attached DAE - Deposits Attached Comments:

EER: 1

190.9_DAE_From-04_To-05.jpg



Mainline Survey Pictures	of B-3 to 3-N	Project Phase 1	
Work Order		Date 1:15 20190709	Sheet 8
Street B Street			
City Anacortes		Weather	
Location			
Up Node B-3	Down M	Node 3-N	Direction Downstream
19	95.2_CL_From-05_Tojpg	20	17.3_CS_From-03_To-05.jpg
Date: 7/09/2019	Ottas Inspection	Date: 7/09/2019	@Atlas Inspection
Distance: 195.2 ft	-	Distance: 207.3 ft	
Obs: CL - Crack Longitudinal	A	Obs: CS - Crack Spiral	
Comments:		Comments:	Carlored Martin 1
EER: 1	05: 07 07. 09. 19 LC1: + 0195.2	EER: 1	05: 08 07. 09. 19 LC1: + 0207.30 ft

 Date:
 7/09/2019

 Distance:
 207.3 ft

Obs:

JSM - Joint Separated Medium

Comments:

EER: 1

207.3_JSM_From-_To-.jpg



 Date:
 7/09/2019

 Distance:
 211.2 ft

 Obs:
 CM - Crack Hultiple

Comments:

EER: 1

211.2_CM_From-10_To-02.jpg



Mainline Survey Pictur	es of B-3 to 3-N	Project Phase 1	
Work Order	Date 1:15	5 20190709	Sheet 8
Street B Street			
City Anacorte	25	Weather	
Location			
Up Node B-3	Down Node 3-	N	Direction Downstream
	212.0_OBZ_From-07_Tojpg	21	L5.5_CL_From-03_Tojpg
Date: 7/09/2019	Gratias Inspection	Date: 7/09/2019	@Atlas Inspection
Distance: 212 ft		Distance: 215.5 ft	
Obs:		Obs:	and the second s
OBZ - Obstruction Other		CL - Crack Longitudinal	
Comments:		Comments:	and the second second
EER: 1. Unknown Material	05: 09 07. 09. 19 LC1: + 0211.20 ft	EER: 1	05: 09 07. 09. 19 LC1: + 0215.20 ft

 Date:
 7/09/2019

 Distance:
 215.5 ft

Obs:

IWB - Infiltration Weeper Barrel

Comments:

EER: 1. Related to the CL at 215.5'.



05:09 07.09.19



 Date:
 7/09/2019

 Distance:
 219.4 ft

 Obs:
 Spiral

 CS - Crack Spiral
 Spiral

Comments:

EER: 1

219.4_CS_From-03_To-05.jpg



Mainline Survey Picture	s of B-3 to 3-N	Project Phase 1		
Work Order	Date	e 1:15 20190709	Sh	eet 8
Street B Street				
City Anacortes	5	Weather	r	
Location				
Up Node B-3	Down Node	e 3-N	Direction	Downstream
	223.7_CS_From-03_To-05.jpg	2	31.6_CC_From-09_To-12.jpg	
Date: 7/09/2019	CAtlas Inspection	Date: 7/09/2019	@Atlas Inspection	0
Distance: 223.7 ft	· ·	Distance: 231.6 ft		
Obs:		Obs:	and the second second	TER
CS - Crack Spiral		CC - Crack Circumferential	mar Mary 1	
Comments:		Comments:		
EER: 1	05: 10 07. 09. 19 LC1: + 0223.70 ft	EER: 1	05: 11 07. 09. 19	LC1: + 0231.60 ft

7/09/2019

231.6 ft Distance:

Obs:

Date:

CL - Crack Longitudinal

Comments:

EER: 1



Date: 7/09/2019 231.6 ft Distance: Obs: ISB - Infil Stain Barrel

Comments:

EER: 1. Related to the CL at 231.6'.

231.6_IS_From-04_To-.jpg



Mainline Survey Pictures of	f B-3 to 3-N		Project Phase 1		
Work Order		Date 1:15 2	0190709		Sheet 8
Street B Street					
City Anacortes			Weat	:her	
Location					
Up Node B-3		Down Node 3-N			Direction Downstream
23	5.9_CS_From-03_To-04.jpg			239.8_CL_From-02_Tojp	g
Date: 7/09/2019	@ Atlas Inspection		Date: 7/09/2019	Htlas Inspection	
Distance: 235.9 ft		0	Distance: 239.8 ft	1	
Obs: CS - Crack Spiral			Obs: CL - Crack Longitudinal		
Comments:			Comments:		
FFR: 1	05: 11 07.09.19	LC1: + 0235.50 ft	FFR: 1	05: 11 07. 09. 19	LC1: + 0239.80 ft

 Date:
 7/09/2019

 Distance:
 239.8 ft

 Obs:

IW - Infil Weeper

Comments:

EER: 1. Related to the CL at 239.8'.



05: 11 07. 09. 19 LC1: + 0239.80 ft

 Date:
 7/09/2019

 Distance:
 243.7 ft

 Obs:

Obs: JOM - Joint Offset Medium

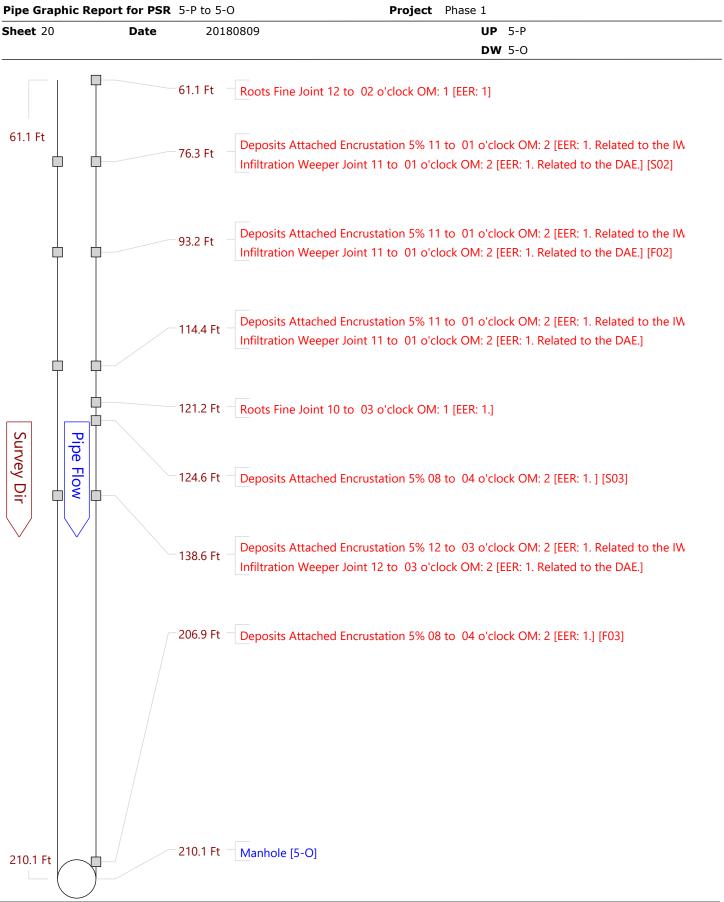
Comments:

EER: 2. At Acess Manhole

243.7_JOM_From-_To-.jpg



PSR Graphic	for 5-P to 5-O	Pro	j ect Phase 1		
Sheet 20	Surveyor HENRY CADE	Certificate P0037737-052022	System Owne	r	
Reviewed By	Reviewer #		Work Order		
Customer		PO	M	ledia Label	
Date 20180809	13:52 Weather	PreClean	Not Known	Date Cleaned	
Flow Control		Purpose		Direction Downstr	eam
Inspection Status	Complete Inspection	Consequence	of Failure	Pressure	
Inspection Techno	logy Used	CCTV Laser Sona	· Sidewall Z	oom 🗌 Other]
Street 5th Street		City Anacortes	Drainag	e Area	
Location			Pipe Us	se Process Pipe	
Details			Height	21 in Width	n in
Shape Circular	I	Material Reinforced Concrete Pip	e Lining		
Coating		Joint Length ft	Total Length	210.1 ft	
Len. Surveyed	210.1 ft	Year Constructed	Year Rehabilitate	d	
Up 5-P Northing		Rim Invert Grade Easting	Invert Elevatio	Rim Grade n	ft
Down 5-0		Rim Invert Grade	Invert	Rim Grade	ft
Northing		Easting	Elevatio	n	
Coordinate System	1		Vertical Datum		
GPS Accuracy					
Additionl Info			Miscellaneous	Structural O&M	Constructional
0.0 Ft	0.0 Ft 2.1 Ft 15.0 Ft 23.1 Ft 23.2 Ft 37.8 Ft	Manhole [5-P] Miscellaneous Water Level 10% Miscellaneous General Observat Miscellaneous General Observat Roots Fine Joint 08 to 03 o'cloc Surface Damage Reinforcement Roots Fine Joint 08 to 12 o'cloc	ion [Steam in sewer les k OM: 1 [EER: 1] Visible 07 to 05 o'cloo	ssens visability.]	.1'.]
53.7 Ft	53.7 Ft	Surface Damage Reinforcement	Visible 07 to 05 o'cloo	:k ST: 4 [EER: 1.]	



Tabular Repo	ort for 5-P to 5-O		Project Phase 1		
Sheet 20	Surveyor HENRY CADE	Certificate P0037737-0	52022 Syste	m Owner	
Reviewed By	Reviewer #	ŧ	Work Orde	۶r	
Customer			РО	Media Label	
Date 20180	809 13:52 Weather	Р	reClean Not Known	Date Cleaned	
Flow Control		Purpose		Direction Downstream	
Inspection Stat	us Complete Inspectior	Conse	quence of Failure	Pressure	
Inspection Tech	nnology Used	CCTV Laser	Sonar Sidew	all 🗌 Zoom 🗌 Other	
Street 5th Stre	et	City Anacortes		Drainage Area	
Location				Pipe Use Process Pipe	
Details				Height 21 in Width	in
Shape Circular		Material Reinforced Cond	crete Pipe Linin	g	
Coating		Joint Length	ft Total Ler	ngth 210.1 ft	
Len. Surveyed	210.1 ft	Year Constructed	Year Reha	bilitated	
Up 5-P		Rim Invert	Grade Invert	Rim Grade	ft
Northing		Easting		Elevation	
Down 5-0		Rim Invert	Grade Invert	Rim Grade	ft
Northing		Easting		Elevation	
Coordinate Syst	tem		Vertica	l Datum	
GPS Accuracy					
Additionl Info					

			Miscellaneous		Str	Structural		O&M Constructional	
Count	CD	Code	Val 1	Val 2	%	Jnt	Fr	То	Remarks
0.0		AMH - Manhole							5-P
0.0		MWL - Miscellaneous Water Level			010				
2.1		MGO - Miscellaneous General Observation							Video starts at 2.1'. No footage of 0'-2.1'.
15.0		MGO - Miscellaneous General Observation							Steam in sewer lessens visability.
23.1		RFJ - Roots Fine Joint				X	80	03	EER: 1
23.2		SRV - Surface Damage Reinforcement Visible				Х	07	05	EER: 1.
37.8		RFJ - Roots Fine Joint				Х	08	12	EER: 1
53.7		SRV - Surface Damage Reinforcement Visible					07	05	EER: 1.
61.1		RFJ - Roots Fine Joint				Х	12	02	EER: 1
76.3	S01	DAE - Deposits Attached Encrustation			005	Х	11	01	EER: 1. Related to the IWJ.
76.3	S02	IWJ - Infiltration Weeper Joint				Х	11	01	EER: 1. Related to the DAE.
93.2	F01	DAE - Deposits Attached Encrustation			005	Х	11	01	EER: 1. Related to the IWJ.
93.2	F02	IWJ - Infiltration Weeper Joint				Х	11	01	EER: 1. Related to the DAE.
114.4		DAE - Deposits Attached Encrustation			005	Х	11	01	EER: 1. Related to the IWJ.
114.4		IWJ - Infiltration Weeper Joint				Х	11	01	EER: 1. Related to the DAE.
121.2		RFJ - Roots Fine Joint				Х	10	03	EER: 1.
124.6	S03	DAE - Deposits Attached Encrustation			005		80	04	EER: 1.
138.6		DAE - Deposits Attached Encrustation			005	X	12	03	EER: 1. Related to the IWJ.
138.6		IWJ - Infiltration Weeper Joint				Х	12	03	EER: 1. Related to the DAE.
206.9	F03	DAE - Deposits Attached Encrustation			005		08	04	EER: 1.
210.1		AMH - Manhole							5-0
210.1	£+	Total Length Surveyed							

210.1 ft Total Length Surveyed

Mainline Survey Picture	s of 5-P to 5-O		Project Phase 1	1	
Work Order	Order Date 3:52 20180809				Sheet 20
Street 5th Street	t				
City Anacortes	5		Weat	ther	
Location					
Up Node 5-P		Down Node 5-0			Direction Downstream
	23.1_RFJ_From-08_To-03.jpg			23.2_SRV_From-07_To-0	5.jpg
Date: 8/09/2018	6 ATTACK		Date: 8/09/2018	e	0
Distance: 23.1 ft	f the second	\sim	Distance: 23.2 ft		
Obs: RFJ - Roots Fine Joint			Obs: SRV - Surface Damage Reinforcement Visible		
Comments:	5P to 50	and the second s	Comments:	5P 10 60	
EER: 1	10: 16 09. 08. 18	LC1: + 0023.10 ft	EER: 1.	10: 18 09. 08: 18	LC1: + 0023.20 ft

 Date:
 8/09/2018

 Distance:
 37.8 ft

 Obs:

RFJ - Roots Fine Joint

Comments:

EER: 1



Date:	8/09/2018				
Distance:	53.7 ft				
Obs: SRV - Surfa Reinforceme	5				
Comments:					
EER: 1.					

53.7_SRV_From-07_To-05.jpg



Mainline Survey Picture	es of 5-P to 5-O	Project Phase 1	
Work Order	Date 3:	52 20180809	Sheet 20
Street 5th Stree	t		
City Anacorte	S	Weather	
Location			
Up Node 5-P	Down Node	5-0	Direction Downstream
	61.1_RFJ_From-12_To-02.jpg	76.3_DA	E_From-11_To-01.jpg
Date: 8/09/2018	•	Date: 8/09/2018	•
Distance: 61.1 ft		Distance: 76.3 ft	MTT. C
Obs: RFJ - Roots Fine Joint		Obs: DAE - Deposits Attached Encrustation	
Comments:	5P to 50	Comments:	5P to 50
EER: 1	10: 21 09.08.18 EC1: + 0060.40 ft	EER: 1. Related to the	10: 21 09. 08. 18 LC1: + 0075.30 ft

IWJ.

 Date:
 8/09/2018

 Distance:
 114.4 ft

Obs:

DAE - Deposits Attached Encrustation

Comments:

EER: 1. Related to the IWJ.



Date:8/09/2018Distance:121.2 ftObs:RFJ - RootsFine Joint

Comments:

EER: 1.

121.2_RFJ_From-10_To-03.jpg



Mainline Survey Pictures	of 5-P to 5-O	Project Phase 1	
Work Order	Date 3:52 2	20180809	Sheet 20
Street 5th Street			
City Anacortes		Weather	
Location			
Up Node 5-P	Down Node 5-0		Direction Downstream
1	38.6_DAE_From-12_To-03.jpg		
Date: 8/09/2018 Distance: 138.6 ft			
Obs: DAE - Deposits Attached Encrustation			
Comments:	5P to 50		
EER: 1. Related to the IWJ.	10: 28 09. 08. 18 LC1: +0138.60 ft		

PSR Graphic	for D-6.1 to D-20	Project Phase 1	
Sheet 21	Surveyor HENRY CADE	Certificate P0037737-052022 System Owner	
Reviewed By	Reviewer #	# Work Order	
Customer		PO Media Label	
Date 2017062	9 12:52 Weather	PreClean Not Known Date Cleaned	
Flow Control		Purpose Direction Upstream	
Inspection Status	Complete Inspection	Consequence of Failure Pressure	
Inspection Techn	ology Used	CCTV Laser Sonar Sidewall Zoom Other	
Street D Street		City Anacortes Drainage Area	
Location		Pipe Use Process Pipe	
Details		Height 15 in Width in	
Shape Circular	I	Material Reinforced Concrete Pipe Lining	
Coating		Joint Length ft Total Length 233.8 ft	
Len. Surveyed	233.8 ft	Year Constructed Year Rehabilitated	
Up D-20 Northing		Rim Invert Grade Invert Rim Grade Easting Elevation	ft
Down D-6.1			ft
Northing		Easting Elevation	
Coordinate Syster	m	Vertical Datum	
GPS Accuracy			
Additionl Info			
0.0 Ft	0.0 Ft	Manhole [D-6.1] Miscellaneous Water Level 10% Surface Aggregate Visible 08 to 04 o'clock ST: 2 [EER: 1.] [S01]	
Survey Dir	- 149.4 Ft - 172.6 Ft	Broken Void Visible 11 o'clock ST: 5 [EEP: 3.]	
233.8 Ft	233.8 Ft	Hole Soil Visible 07 to 12 o'clock ST: 5 [EER: 4. Hole is access manhole.] Infil Runner Connection 07 o'clock OM: 4 [EER: 2. Runner is coming from manhole.] Surface Aggregate Visible 08 to 04 o'clock ST: 2 [EER: 1] [F01] Manhole [D-20]	

Tabular Report	for D-6.1 to D-20		Proje	ect Phase 1		
Sheet 21	Surveyor HENRY CADE	Certificate P0037	737-052022	System Own	er	
Reviewed By	Reviewer #	÷		Work Order		
Customer			PO	I	Media Label	
Date 2017062	9 12:52 Weather		PreClean	Not Known	Date Cleaned	
Flow Control		Purp	ose		Direction Upstrea	am
Inspection Status	Complete Inspection	ı с	Consequence	of Failure	Pressure	
Inspection Technol	ology Used	CCTV 🗌 Las	er 🗌 Sonar	Sidewall	Zoom 🗌 Other	
Street D Street		City Anacortes	S	Draina	ge Area	
Location				Pipe L	Jse Process Pipe	
Details				Heigh	t 15 in Widt	th in
Shape Circular		Material Reinforce	d Concrete Pipe	e Lining		
Coating		Joint Length	ft	Total Length	233.8 ft	
Len. Surveyed	233.8 ft	Year Constru	ucted	Year Rehabilitate	ed	
Up D-20		Rim Invert	Grade	Invert	Rim Grade	ft
Northing		Easting		Elevatio	on	
Down D-6.1		Rim Invert	Grade	Invert	Rim Grade	ft
Northing		Easting		Elevatio	on	
Coordinate Syster	m			Vertical Datur	n	
GPS Accuracy						
Additionl Info						
			Miscellane	ous Structural	O&M	Constructional

			M	Miscellaneous		Stru	Structural		O&M Constructional
Count	CD	Code	Val 1	Val 2	%	Jnt	Fr	То	Remarks
0.0		AMH - Manhole							D-6.1
0.0		MWL - Miscellaneous Water Level			010				
0.0	S01	SAV - Surface Aggregate Visible					80	04	EER: 1.
149.4		TBA - Tap Break-in Activity	4.0				12		EER: 1
172.6		BVV - Broken Void Visible					11		EER: 3.
172.6		TBI - Tap Break-in Intruding	4.0	2.0			12		EER: 1
233.8		HSV - Hole Soil Visible					07	12	EER: 4. Hole is access manhole.
233.8		IRC - Infil Runner Connection					07		EER: 2. Runner is coming from manhole.
233.8	F01	SAV - Surface Aggregate Visible					08	04	EER: 1
233.8		AMH - Manhole							D-20
222.0	£+	Total Longth Survoyed							•

233.8 ft Total Length Surveyed

Mainline Survey Pictures of	D-6.1 to D-20	Project Phas	e 1
Work Order		Date 2:52 20170629	Sheet 21
Street D Street			
City Anacortes		W	eather
Location			
Up Node D-20	D	Down Node D-6.1	Direction Upstream
0.0_	_SAV_From-08_To-04.jpg		149.4_TBA_From-12_Tojpg
Date: 6/29/2017	1021S. 7	Date: 6/29/201	0149,4**
Distance: 0 ft		Distance: 149.4	4 ft
Obs:	Street Allen H	Obs:	the second second
SAV - Surface Aggregate Visible		TBA - Tap Break-in Activity	
Comments:		Comments:	
EER: 1.	From M/H D-6.1 To M/H D-20	EER: 1	From (1-1) and (1-1)

 Date:
 6/29/2017

 Distance:
 172.6 ft

 Obs:
 172.6 ft

BVV - Broken Void Visible

Comments:

EER: 3.



 Date:
 6/29/2017

 Distance:
 172.6ft

 Obs:
 TBI - Tap Break-in Structure

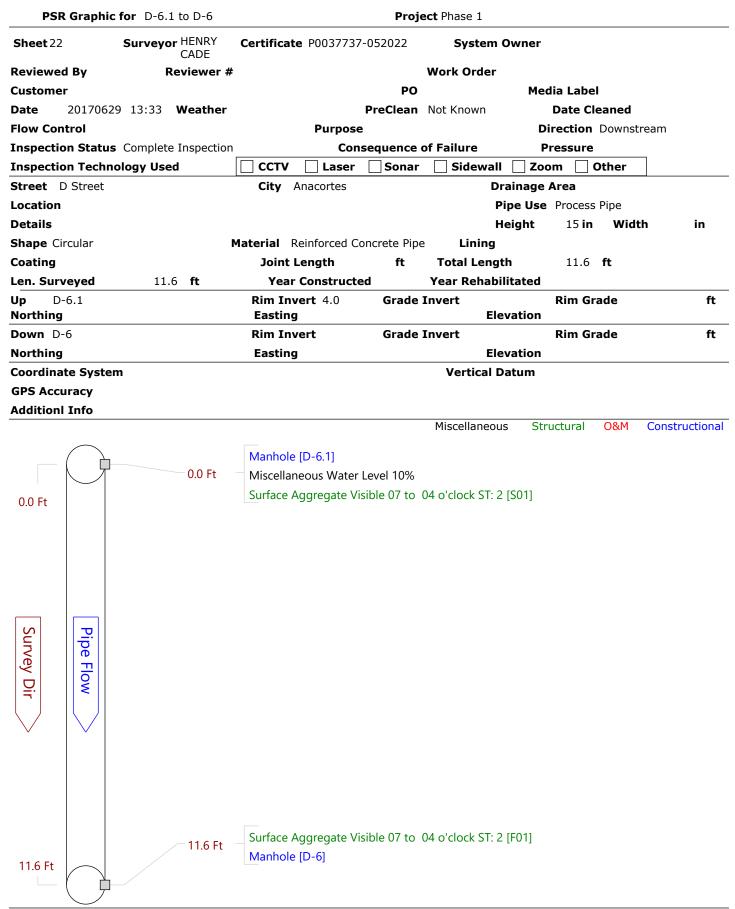
 Comments:
 Structure

EER: 1

172.6_TBI_From-12_To-.jpg



Mainline Survey Pictures of D-6.1 to D-20	Project Phase 1	
Work Order	Date 2:52 20170629	Sheet 21
Street D Street		
City Anacortes	Weat	her
Location		
Up Node D-20	Down Node D-6.1	Direction Upstream
233.8_IRC_From-07	_Tojpg	
Date: 6/29/2017 Distance: 233.8 ft		
Obs: IRC - Infil Runner Connection		
Comments:		
EER: 2. Runner is From M/H D- coming from manhole.	-6+1 Ta M/H D-20	



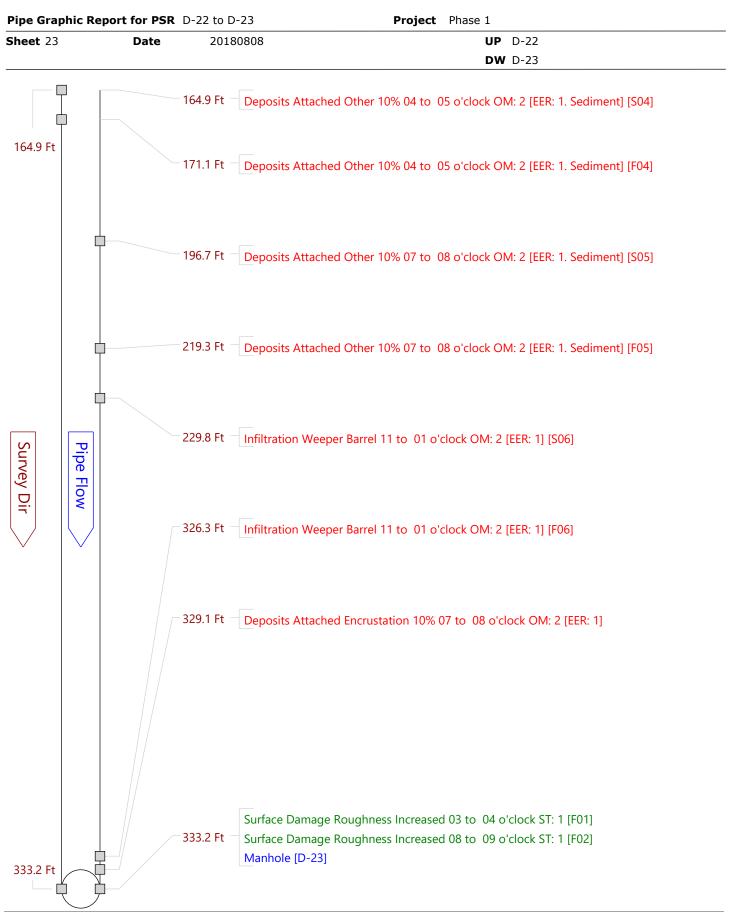
Tabular Report	t for D-6.1 to D-6		Proj	ect Phase 1			
Sheet 22	Surveyor HENRY CADE	Certificate P003773	7-052022	Syster	n Owner		
Reviewed By	Reviewer #			Work Orde	r		
Customer			PO		Мес	dia Label	
Date 2017062	29 13:33 Weather		PreClean	Not Known		Date Cleaned	
Flow Control		Purpos	е		D	irection Downs	tream
Inspection Status	s Complete Inspection	Сог	nsequence	of Failure	Р	ressure	
Inspection Techn	ology Used	CCTV Laser	Sonar	Sidewa	all 🗌 Zoo	om 🗌 Other	
Street D Street		City Anacortes			Drainage	Area	
Location					Pipe Use	Process Pipe	
Details					Height	15 in Wid	th in
Shape Circular	1	Material Reinforced C	Concrete Pip	e Linin	g		
Coating		Joint Length	ft	Total Ler	ngth	11.6 ft	
Len. Surveyed	11.6 ft	Year Construct	ed	Year Reha	bilitated		
Up D-6.1 Northing		Rim Invert 4.0 Easting	Grade	Invert I	Elevation	Rim Grade	ft
Down D-6		Rim Invert	Grade	Invert		Rim Grade	ft
Northing		Easting		E	Ievation		
Coordinate Syste	m			Vertica	l Datum		
GPS Accuracy							
Additionl Info							
			Miscellane	eous St	ructural	O&M	Constructional
Count CD Cod	le	Va	1 Val 2	% Jn	t Fr To Re	emarks	

Count	CD	Code	Val 1	Val 2	%	Jnt	Fr	То	Remarks
0.0		AMH - Manhole							D-6.1
0.0		MWL - Miscellaneous Water Level			010				
0.0	S01	SAV - Surface Aggregate Visible					07	04	
11.6	F01	SAV - Surface Aggregate Visible					07	04	
11.6		AMH - Manhole							D-6

11.6 ft Total Length Surveyed

Mainline Survey Pictures of D-6.	1 to D-6 Project Phase 1	
Work Order	Date 3:33 20170629	Sheet 22
Street D Street		
City Anacortes	Weath	er
Location		
Up Node D-6.1	Down Node D-6	Direction Downstream
0.0_SAV_	From-07_To-04.jpg	
Date: 6/29/2017	0005-5*	
Distance: 0 ft		
Obs: SAV - Surface Aggregate Visible		
Comments:	From MRH D-6-1 To-MCH D-6	

Northing Easting Elevation	PSR Graphic for D-22 to D-23	Project Phase 1	
PO Media Label Date 20180808 10:25 Weather Preclean Not Known Date Cleaned Flow Control Purpose Direction Downstream Inspection Status Complete Inspection Consequence of Failure Pressure Inspection Technology Used C CTV Laser Sonar Sidewall Zoom Other Street D Street City Anacortes Drainage Area Location Pipe Use Process Pipe Details Material Reinforced Concrete Pipe Lining Coating Joint Length ft Total Length 333.2 ft Len. Surveyed 333.2 ft Year Constructed Year Rehabilitated Up D-22 Rim Invert Grade Invert Rim Grade ft Northing Easting Elevation Coordinate System Vertical Datum GPS Accuracy Mathole [D-22] Miscellaneous General Observation [Survey starts at 2.0". No footage between 0.0"' O.0 Ft Miscellaneous General Observation [Survey starts at 2.0". No footage between 0.0"' Surface Damage Roughness Increased 03 to 04 o'clock ST: 1 [EER: 1] [S01] Surface Damage Roughness Increased 03 to 04 o'clock ST: 1 [EER: 1] [S02] Surface Damage Roughness Increased 03 to 04 o'cloc	Sheet 23 Surveyor HENRY CADE	Certificate P0037737-052022 System Owner	
Date 20180808 10:25 Weather PreClean Not Known Date Cleaned Flow Control Purpose Direction Downstream Inspection Status Complete Inspection Corv Laser Sonar Other Street Dstret City Anacortes Drainage Area Location Pipe Use Process Pipe Details Height 32 in Width Shape Circular Material Reinforced Concrete Pipe Lining Coating Joint Length t Total Length 333.2 ft Vear Constructed Year Rehabilitated Up D-22 Rim Tuvert Grade Invert Rim Grade ft Northing Easting Elevation Coordinate System Vertical Datum GSM Constructor OB Pipe Use Not fting Mathole [D-22] Miscellaneous Water Level 20% Miscellaneous General Observation [Survey starts at 2.0]. No footage between 0.0'- : Ou Ft Ou Ft Miscellaneous General Observation [Survey starts at 2.0]. No footage between 0.0'- : Surface Damage Roughness Increased 03 to 04 o'clock ST: 1 [EER: 1] [S01] Surface Damage Roughness Increased 03 to 04 o'clock ST: 1 [EER: 1] [S02] 99.9 Ft Infilitation Weeper Barrel 11 to 01 o'clock OM: 2 [EER: 1] Ou Ft Infilitation Weeper Barrel 11 to 01 o'	Reviewed By Reviewer #	# Work Order	
Flow Control Purpose Direction Downstream Inspection Status Complete Inspection Consequence of Failure Pressure Inspection Technology Used CCTV Laser Sonar Other Street D Street City Anacortes Drainage Area Location Pipe Use Process Pipe Details Height 32 in Width in Shape Circular Material Reinforced Concrete Pipe Lining Coating Len. Surveyed 333.2 ft Year Constructed Year Rehabilitated Up D-22 Rim Invert Grade Invert Rim Grade ff Northing Easting Elevation Coordinate System Vertical Datum Coordinate System Vertical Datum GPS Accuracy Addition I Info Miscellaneous Structural OBM Construction 0.0 Ft Miscellaneous General Observation [Survey starts at 2.0". No footage between 0.0": Surface Damage Roughness Increased 03 to 04 o'clock ST: 1 [EER: 1] [S01] Surface Damage Roughness Increased 03 to 04 o'clock ST: 1 [EER: 1] [S02] 99.9 Ft Infil Stain Barrel 01 o'clock OM: 2 [EER: 1] Infil Stain Barrel 01 o'clock O	-	PO Media Label	
Inspection Status Complete Inspection Consequence of Failure Pressure Inspection Technology Used	Date 20180808 10:25 Weather	r PreClean Not Known Date Cleaned	
Inspection Technology Used ✓ CCTV Laser Sonar Sidewall Zoom Other Street D Street City Anacortes Drainage Area Pipe Use Process Pipe Details Height 32 in Width in Shape Circular Material Reinforced Concrete Pipe Lining Coating Joint Length ft Total Length 333.2 ft Len. Surveyed 333.2 ft Year Constructed Year Rehabilitated Up Down D-23 Rim Invert Grade Invert Rim Grade ff Northing Easting Elevation Construction Grade Invert Rim Grade ff Northing Easting Elevation Construction Miscellaneous Structural 0&M Construction GPS Accuracy Additioni Info Miscellaneous General Observation [Survey starts at 2.0". No footage between 0.0" - ; Surface Damage Roughness Increased 03 to 04 o'clock ST: 1 [EER: 1] [S01] 0.0 Ft Miscellaneous General Observation [Survey starts at 2.0". No footage between 0.0" - ; Surface Damage Roughness Increased 03 to 04 o'clock ST: 1 [EER: 1] [S02] 99.9 Ft Infiltration Weeper Barrel 11	Flow Control	Purpose Direction Downstre	eam
Street D Street City Anacortes Drainage Area Location Pipe Use Process Pipe Details Height 32 in Width in Shape Circular Material Reinforced Concrete Pipe Lining 333.2 ft tens Coating Joint Length ft Total Length 333.2 ft tens Up D-22 Rim Invert Grade Invert Rim Grade ft Northing Easting Elevation ft ft Down D-23 Rim Invert Grade Invert Rim Grade ft Northing Easting Elevation ft ft Coordinate System Vertical Datum GPS Accuracy Additioni Info Miscellaneous Water Level 20% 0.0 Ft 0.0 Ft Wiscellaneous General Observation [Survey starts at 2.0". No footage between 0.0" - ; Surface Damage Roughness Increased 03 to 04 o'clock ST: 1 [EER: 1] [S01] 0.0 Ft 105.1 Ft Infil Stain Barrel 01 o'clock OM: 1 [EER: 1] 105.1 Ft Infil Stain Barrel 01 o'clock OM: 2 [EER: 1]	Inspection Status Complete Inspectior	on Consequence of Failure Pressure	
Location Pipe Use Process Pipe Details Height 32 in Width in Shape Circular Material Reinforced Concrete Pipe Lining Coating Joint Length ft Total Length 333.2 ft Len. Surveyed 333.2 ft Year Constructed Year Rehabilitated Up D-22 Rim Invert Grade Invert Rim Grade ff Northing Easting Elevation Down D-23 Rim Invert Grade Invert Rim Grade ff Northing Easting Elevation Coordinate System Vertical Datum GPS Accuracy Addition Info Miscellaneous Structural O&M Construction 0.0 Ft Manhole [D-22] Miscellaneous General Observation [Survey starts at 2.0". No footage between 0.0" - : Surface Damage Roughness Increased 03 to 04 o'clock ST: 1 [EER: 1] [S01] Surface Damage Roughness Increased 03 to 09 o'clock ST: 1 [EER: 1] [S02] 99.9 Ft Infiltration Weeper Barrel 11 to 01 o'clock OM: 2 [EER: 1] Figure Figure Figur	Inspection Technology Used	✓ CCTV Laser Sonar Sidewall Zoom Other	
Details Height 32 in Width in Shape Circular Material Reinforced Concrete Pipe Lining Coating Joint Length ft Total Length 333.2 ft Len. Surveyed 333.2 ft Year Constructed Year Rehabilitated Up D-22 Rim Invert Grade Invert Rim Grade ft Northing Easting Elevation ft ft ft Down D-23 Rim Invert Grade Invert Rim Grade ft Northing Easting Elevation ft ft Coordinate System Vertical Datum Grade Invert Rim Grade ft Marcel aneous Structural O&M Construction GPS Accuracy Manhole [D-22] Miscellaneous Water Level 20% Miscellaneous General Observation [Survey starts at 2.0'. No footage between 0.0' - ; 0.0 Ft Up Surface Damage Roughness Increased 03 to 04 o'clock ST: 1 [EER: 1] [S01] Surface Damage Roughness Increased 03 to 04 o'clock ST: 1 [EER: 1] [S02] Up Tione Up Surface Damage Roughness Increased 08 to 09 o'clock ST: 1 [EER: 1] [S02] Surface Damage Roughness Increased 08 to 09 o'clock ST: 1 [EER:	Street D Street	City Anacortes Drainage Area	
Shape Circular Material Reinforced Concrete Pipe Lining Coating Joint Length ft Total Length 333.2 ft Len. Surveyed 333.2 ft Year Constructed Year Rehabilitated Image: Structure in the s	Location	Pipe Use Process Pipe	
Coating Joint Length ft Total Length 333.2 ft Len. Surveyed 333.2 ft Year Constructed Year Rehabilitated Up D-22 Rim Invert Grade Invert Rim Grade ft Northing Easting Elevation ft ft ft Down D-23 Rim Invert Grade Invert Rim Grade ft Northing Easting Elevation ft ft Coordinate System Vertical Datum GPS Accuracy AdditionI Info Miscellaneous Structural O&M Construction 0.0 Ft 0.0 Ft Manhole [D-22] Miscellaneous General Observation [Survey starts at 2.0'. No footage between 0.0' - : Surface Damage Roughness Increased 03 to 04 o'clock ST: 1 [EER: 1] [S01] Surface Damage Roughness Increased 03 to 04 o'clock ST: 1 [EER: 1] [S02] 99.9 Ft Infiltration Weeper Barrel 11 to 01 o'clock OM: 2 [EER: 1] Infiltration Weeper Joint 11 to 01 o'clock OM: 2 [EER: 1] Infiltration Weeper Joint 11 to 01 o'clock OM: 2 [EER: 1]	Details	Height 32 in Width	n in
Len. Surveyed 333.2 ft Year Constructed Year Rehabilitated Up D-22 Rim Invert Grade Invert Rim Grade ft Northing Easting Elevation ft ft ft Down D-23 Rim Invert Grade Invert Rim Grade ft Northing Easting Elevation ft Coordinate System Vertical Datum GPS Accuracy Addition I Info Miscellaneous Structural O&M Construction 0.0 Ft O.0 Ft Miscellaneous General Observation [Survey starts at 2.0'. No footage between 0.0' - ; Surface Damage Roughness Increased 03 to 04 o'clock ST: 1 [EER: 1] [S01] Surface Damage Roughness Increased 03 to 04 o'clock ST: 1 [EER: 1] [S02] 99.9 Ft Infiltration Weeper Barrel 11 to 01 o'clock OM: 2 [EER: 1] 105.1 Ft Infilt Stain Barrel 01 o'clock OM: 1 [EER: 1] Infiltration Weeper Joint 11 to 01 o'clock OM: 2 [EER: 1] Infiltration Weeper Joint 11 to 01 o'clock OM: 2 [EER: 1] Infiltration Weeper Joint 11 to 01 o'clock OM: 2 [EER: 1]	Shape Circular	Material Reinforced Concrete Pipe Lining	
Up D-22 Rim Invert Grade Invert Rim Grade ff Northing Easting Elevation Rim Grade ff Northing Easting Elevation ff Northing Easting Elevation ff Coordinate System Vertical Datum GS Accuracy Addition Info Addition Info Miscellaneous Structural O&M Construction 0.0 Ft 0.0 Ft Manhole [D-22] Miscellaneous General Observation [Survey starts at 2.0'. No footage between 0.0' - : Surface Damage Roughness Increased 03 to 04 o'clock ST: 1 [EER: 1] [S01] Surface Damage Roughness Increased 03 to 04 o'clock ST: 1 [EER: 1] [S02] 99.9 Ft Infiltration Weeper Barrel 11 to 01 o'clock OM: 2 [EER: 1] Very Dir 105.1 Ft Infil Stain Barrel 01 o'clock OM: 1 [EER: 1] Infiltration Weeper Joint 11 to 01 o'clock OM: 2 [EER: 1]	Coating	Joint Length ft Total Length 333.2 ft	
Northing Easting Elevation Down D-23 Rim Invert Grade Invert Rim Grade ff Northing Easting Elevation Coordinate System Vertical Datum GPS Accuracy AdditionI Info Miscellaneous Structural O&M Construction 0.0 Ft 0.0 Ft Manhole [D-22] Miscellaneous Water Level 20% Miscellaneous General Observation [Survey starts at 2.0". No footage between 0.0" - ; Surface Damage Roughness Increased 03 to 04 o'clock ST: 1 [EER: 1] [S01] Surface Damage Roughness Increased 03 to 04 o'clock ST: 1 [EER: 1] [S02] 99.9 Ft Infiltration Weeper Barrel 11 to 01 o'clock OM: 2 [EER: 1] Infiltration Weeper Joint 11 to 01 o'clock OM: 2 [EER: 1]	Len. Surveyed 333.2 ft	Year Constructed Year Rehabilitated	
Northing Easting Elevation Coordinate System Vertical Datum GPS Accuracy Additionl Info Miscellaneous Structural 0&M O.0 Ft Manhole [D-22] Miscellaneous Water Level 20% Miscellaneous General Observation [Survey starts at 2.0'. No footage between 0.0' - ; Surface Damage Roughness Increased 03 to 04 o'clock ST: 1 [EER: 1] [S01] Surface Damage Roughness Increased 08 to 09 o'clock ST: 1 [EER: 1] [S02] 99.9 Ft Infiltration Weeper Barrel 11 to 01 o'clock OM: 2 [EER: 1] 105.1 Ft Infil Stain Barrel 01 o'clock OM: 1 [EER: 1] Infiltration Weeper Joint 11 to 01 o'clock OM: 2 [EER: 1]	•		ft
Coordinate System Vertical Datum GPS Accuracy Additionl Info Miscellaneous Structural 0&M O.0 Ft Manhole [D-22] Miscellaneous Water Level 20% Miscellaneous General Observation [Survey starts at 2.0". No footage between 0.0": Surface Damage Roughness Increased 03 to 04 o'clock ST: 1 [EER: 1] [S01] Surface Damage Roughness Increased 03 to 09 o'clock ST: 1 [EER: 1] [S02] 99.9 Ft Infiltration Weeper Barrel 11 to 01 o'clock OM: 2 [EER: 1] 105.1 Ft Infil Stain Barrel 01 o'clock OM: 1 [EER: 1] Infiltration Weeper Joint 11 to 01 o'clock OM: 2 [EER: 1]	Down D-23	Rim Invert Grade Invert Rim Grade	ft
GPS Accuracy Additionl Info Miscellaneous Structural O&M Construction 0.0 Ft Manhole [D-22] Miscellaneous Water Level 20% 0.0 Ft Miscellaneous General Observation [Survey starts at 2.0'. No footage between 0.0' - ; Surface Damage Roughness Increased 03 to 04 o'clock ST: 1 [EER: 1] [S01] Surface Damage Roughness Increased 03 to 09 o'clock ST: 1 [EER: 1] [S02] 99.9 Ft Infiltration Weeper Barrel 11 to 01 o'clock OM: 2 [EER: 1] 105.1 Ft Infil Stain Barrel 01 o'clock OM: 1 [EER: 1] Infiltration Weeper Joint 11 to 01 o'clock OM: 2 [EER: 1]	Northing	Easting Elevation	
AdditionI Info Miscellaneous Structural 0&M Construction 0.0 Ft 0.0 Ft	Coordinate System	Vertical Datum	
Miscellaneous Structural 0&M Construction 0.0 Ft 0.0 Ft 0	GPS Accuracy		
0.0 Ft 0.0 Ft	Additionl Info		
	0.0 Ft 2.0 Ft 99.9 Ft	Miscellaneous Water Level 20% Miscellaneous General Observation [Survey starts at 2.0'. No footage betwee Surface Damage Roughness Increased 03 to 04 o'clock ST: 1 [EER: 1] [S01] Surface Damage Roughness Increased 08 to 09 o'clock ST: 1 [EER: 1] [S02] Infiltration Weeper Barrel 11 to 01 o'clock OM: 2 [EER: 1] Infil Stain Barrel 01 o'clock OM: 1 [EER: 1]	en 0.0' - <i>'</i>
155.2 Ft 155.2 Ft Infiltration Weeper Barrel 11 to 10 o'clock OM: 2 [EER: 1] [F03]	118.0 Ft		



Tabular Repor	t for D-22 to D-23		Project Phase 1		
Sheet 23	Surveyor HENRY CADE	Certificate P0037737-	052022 Syster	n Owner	
Reviewed By	Reviewer #	ŧ	Work Orde	r	
Customer			PO	Media Label	
Date 201808	08 10:25 Weather	F	PreClean Not Known	Date Cleaned	
Flow Control		Purpose		Direction Downstream	
Inspection Statu	s Complete Inspection	n Conse	equence of Failure	Pressure	
Inspection Techr	nology Used	CCTV Laser	Sonar Sidewa	all 🗌 Zoom 🗌 Other	
Street D Street		City Anacortes		Drainage Area	
Location				Pipe Use Process Pipe	
Details				Height 32 in Width	in
Shape Circular		Material Reinforced Cor	ncrete Pipe Lining	9	
Coating		Joint Length	ft Total Len	gth 333.2 ft	
Len. Surveyed	333.2 ft	Year Constructed	i Year Reha	bilitated	
Up D-22		Rim Invert	Grade Invert	Rim Grade	ft
Northing		Easting	E	levation	
Down D-23		Rim Invert	Grade Invert	Rim Grade	ft
Northing		Easting	E	levation	
Coordinate Syste	em		Vertical	Datum	
GPS Accuracy					
Additionl Info					

			Miscellaneous		Structural		ral	O&M Constructional	
Count	CD	Code	Val 1	Val 2	%	Jnt	Fr	То	Remarks
0.0		AMH - Manhole							D-22
0.0		MWL - Miscellaneous Water Level			020				
2.0		MGO - Miscellaneous General Observation							Survey starts at 2.0'. No footage between 0.0' - 2.0'.
2.0	S01	SRI - Surface Damage Roughness Increased					03	04	EER: 1
2.0	S02	SRI - Surface Damage Roughness Increased					80	09	EER: 1
99.9		IWB - Infiltration Weeper Barrel					11	01	EER: 1
105.1		ISB - Infil Stain Barrel					01		EER: 1
105.1		IWJ - Infiltration Weeper Joint				X	11	01	EER: 1
118.0	S03	IWB - Infiltration Weeper Barrel					11	10	EER: 1
155.2	F03	IWB - Infiltration Weeper Barrel					11	10	EER: 1
164.9	S04	DAZ - Deposits Attached Other			010		04	05	EER: 1. Sediment
171.1	F04	DAZ - Deposits Attached Other			010		04	05	EER: 1. Sediment
196.7	S05	DAZ - Deposits Attached Other			010		07	08	EER: 1. Sediment
219.3	F05	DAZ - Deposits Attached Other			010		07	08	EER: 1. Sediment
229.8	S06	IWB - Infiltration Weeper Barrel					11	01	EER: 1
326.3	F06	IWB - Infiltration Weeper Barrel					11	01	EER: 1
329.1		DAE - Deposits Attached Encrustation			010		07	08	EER: 1
333.2	F01	SRI - Surface Damage Roughness Increased					03	04	
333.2	F02	SRI - Surface Damage Roughness Increased					08	09	
333.2		AMH - Manhole							D-23
222.2	f+	Total Length Surveyed					_		

333.2 ft Total Length Surveyed

Mainline Survey Pictur	es of D-22 to D-23		Proj	ect Phase 1		
Work Order		Date 0:25 20	180808			Sheet 23
Street D Street	:					
City Anacorte	es			Weat	her	
Location						
Up Node D-22		Down Node D-23				Direction Downstream
	2.0_SRI_From-08_To-09.jpg				2.0_SRI_From-03_To-	04.jpg
Date: 8/08/2018	6.		Date:	8/08/2018	6	
Distance: 2 ft	M/ man	•	Distance:	2 ft	100	· ·
Obs:	the state of the s		Obs:			And the second second
SRI - Surface Damage Roughness Increased		and the second	SRI - Surfac Roughness		1930	1 march -
Comments:	D22 to D23	1 Jacks	Comments	:	<u>D</u> 22 to D23	
EER: 1	10: 29 15. 08. 18	LC1:+0003.90 ft	EER: 1		10: 30 15. 08. 18	LC1: +0025,30 ft

 Date:
 8/08/2018

 Distance:
 99.9 ft

Obs:

IWB - Infiltration Weeper Barrel

Comments:

EER: 1

99.9_IWB_From-11_To-01.jpg



Date:8/08/2018Distance:105.1 ftObs:ISB - Infil Stain Barrel

Comments:

EER: 1

105.1_ISB_From-01_To-.jpg



Mainline Survey Pictures o	of D-22 to D-23	Project Phase 1	
Work Order	Date 0:25	20180808	Sheet 23
Street D Street			
City Anacortes		Weat	ther
Location			
Up Node D-22	Down Node D-	23	Direction Downstream
10	5.0_IWJ_From-11_To-01.jpg		118.0_IWB_From-12_Tojpg
Date: 8/08/2018	•	Date: 8/08/2018	(
Distance: 105.1 ft		Distance: 118 ft	
Obs: IWJ - Infiltration Weeper Joint	when it	Obs: IWB - Infiltration Weeper Barrel	Contraction of the second
Comments:	D22 to D23	Comments:	D22 to D23
EER: 1	10: 31 15. 08. 18 LC1: + 0105.10 ft	EER: 1	10: 33 15. 08. 18 LC1: + 0118.70 ft

 Date:
 8/08/2018

 Distance:
 164.9 ft

Obs:

DAZ - Deposits Attached Other

Comments:

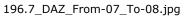
EER: 1. Sediment

164.9_DAZ_From-04_To-05.jpg



Date:8/08/2018Distance:196.7 ftObs:
DAZ - Deposits Attached
OtherAttachedComments:Comments:

EER: 1. Sediment





Mainline Survey Pictures of D-22 to D-23	Project Phase	1
Work Order	Date 0:25 20180808	Sheet 23
Street D Street		
City Anacortes	Wea	ther
Location		
Up Node D-22	Down Node D-23	Direction Downstream
219.3_IWB_From-11_	To-01.jpg	329.1_DAE_From-07_To-08.jpg
ate: 8/08/2018	Date: 8/08/2018	
istance: 229.8 ft	Distance: 329.1 ft	
bs:	Obs:	
WB - Infiltration	DAE - Deposits Attached	
/eeper Barrel	Encrustation	
omments:	Comments:	D22 to D23
ER: 1 10: 39 15. 08. 18	LC1:+0229.80 ft EER: 1	-10: 42 15. 08. 18 LC1: + 0328.50 ft