

EC-2601

I-20/26/126 Corridor Improvement Project

I-126 Station 138+00

6' x 6' RCB

Client: SCDOT

Mead & Hunt Project Number: 114295.02

Phase: Drainage

Summary:

Mead & Hunt, Inc. assessed the overall condition of a double 6 foot by 6 foot RCB as illustrated in the provided plan sheets for I-26.

Objective:

The inspections are to assess the overall condition of each box culvert. Each culverts dimension will be measured for comparison to the current plans. Deficiencies to be noted include cracks, spalling, cave-ins, debris build-up, sediment build-up, etc. Each box culvert is to be recorded on video, from end to end, to display any deficiencies within the culvert.

I-126 Station 138+00

- Dimensions: 6' X 6' RCB, approximately 402 LF (North End)
84" RCP, approximately 147 LF
6' X 6' RCB, approximately 696 LF (South End)
Total: 1,215 LF

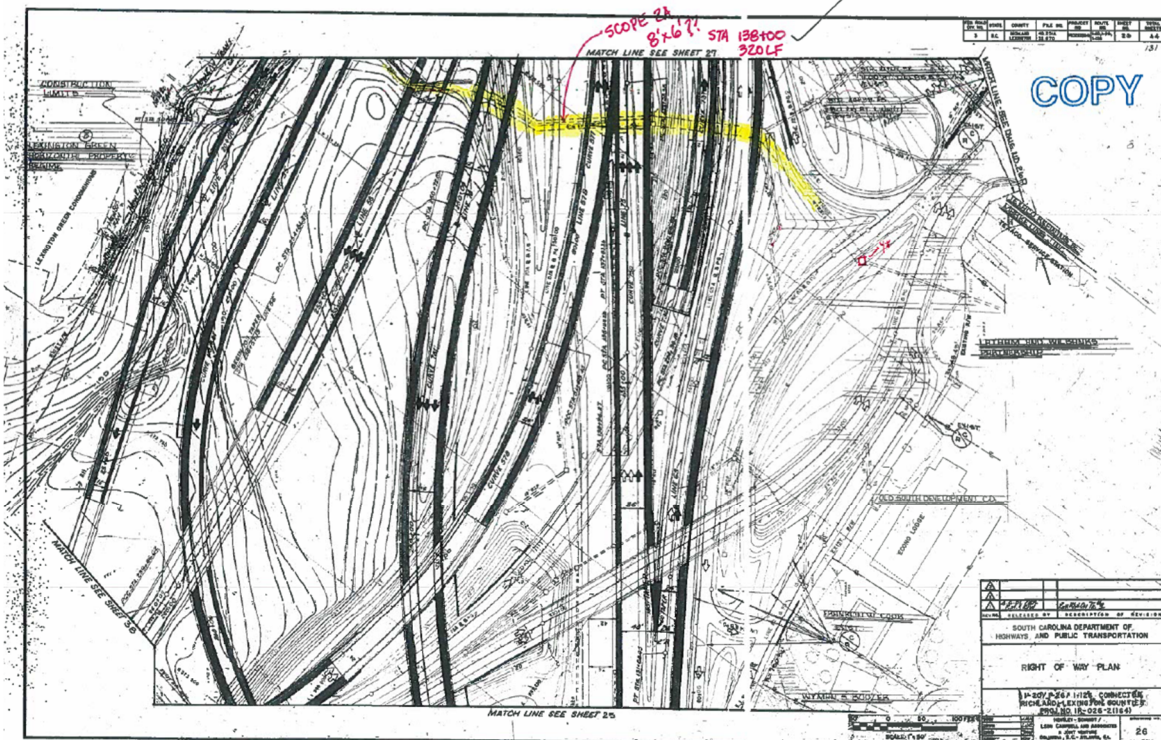
Observations:

1. From the North end, double culvert (A & B) switches to 84" RCP (C) and then back to double culvert (D & E).
2. Culvert A has moderate sediment buildup. Water flow is not hindered,
3. Culvert B has major sediment buildup allowing no water flow.
4. Approximately 328 LF from S end (Culverts D & E); Crack at panel joint. Panel seems to have settled and separated from connecting panel. Exposed reinforcement has sheared with rust scaling and spalling present. Joint separates again after 2 panels. It is estimated these panels are underneath the Westbound Lane Ramp of I-26 (*Not Westbound from I-126)
5. Approximately 200 LF from S end (Culverts D & E); flow bypass in wall (2' X 16').
6. 24" RCP in wall – Approximately 392 LF from S end (Culvert D); Severe joint separation in pipe
7. Approximately 400 LF from S end (Culverts D & E); flow bypass in wall (Full height X 4')
8. 24" RCP in wall – Approximately 496 LF from N end (84" Pipe C)
9. 10" CMP in wall – Approximately 176 LF from N end (Culvert A); Pipe is partially collapsed

10. Ceiling drainage inlet – Approximately 408 LF from N end (Culverts A & B); Drain is completely blocked and is not serving intended purpose
11. 36" RCP in wall – Approximately 400 LF from S end (Culvert E); Moderate joint separation in pipe
12. 48" RCP in wall – Approximately 200 LF from S end (Culvert E)

Recommendations:

1. Culvert settling may indicate failure of earthwork underneath culvert, therefore patching would only be a temporary solution. Repair section or entire culvert.
2. Repair/replace 24" RCP section in wall
3. Replace 10" CMP
4. Repair/replace 36" RCP section in wall
5. Clean culvert and drainage inlets



I-20/26/126 Corridor Improvement Project

Station 129+50

18-inch RCP

Client: SCDOT

Mead & Hunt Project Number: 114295.02

Phase: Drainage

Video Pipe Inspections

Summary:

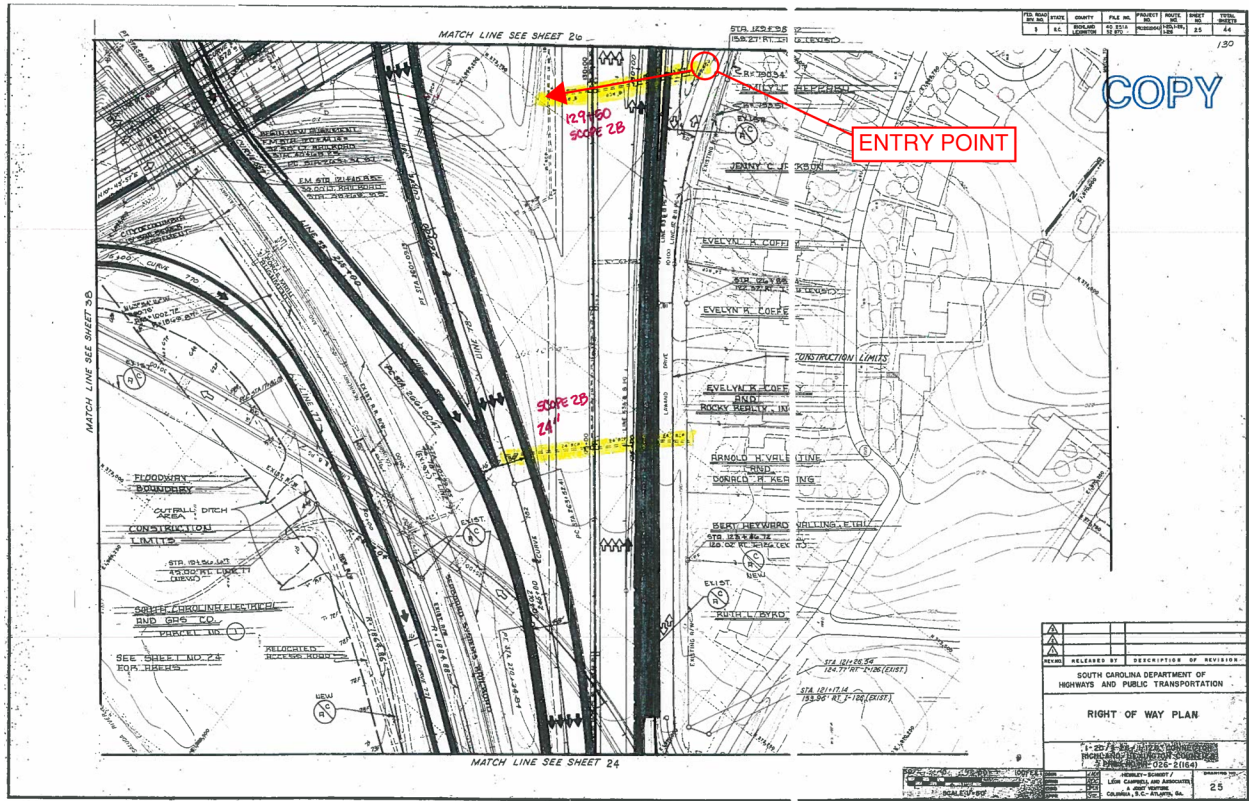
Mead & Hunt, Inc. assessed the overall condition of an 18-inch reinforced concrete pipe as illustrated on sheet number 25 of the provided plan sheets for I-126.

Objective:

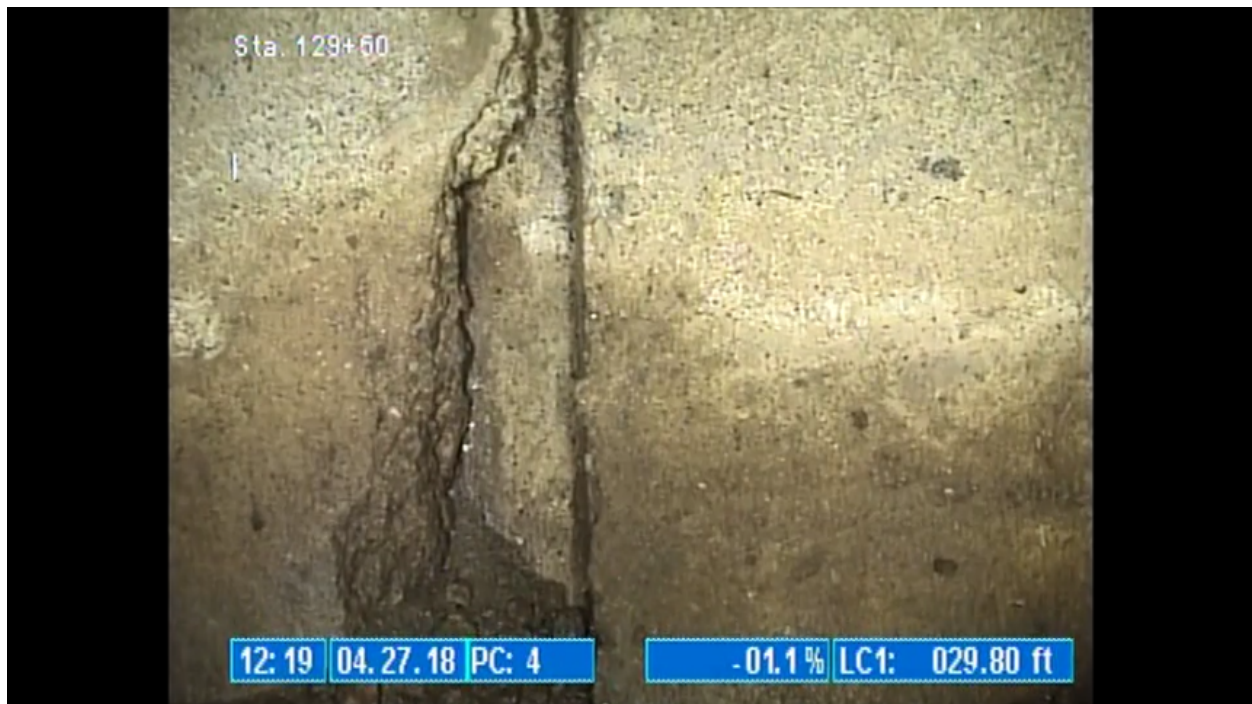
The inspections are to assess the overall condition of each box culvert. Each culverts dimension will be measured for comparison to the current plans. Deficiencies to be noted include cracks, spalling, cave-ins, debris build-up, sediment build-up, etc. Each box culvert is to be recorded on video, from end to end, to display any deficiencies within the culvert.

I-126 Station 129+50

- Dimensions: Verified 18-inch RCP, Approximately 400 LF
- Observations
 1. Joint at approximately 26-feet (South of entry)-chipped
 2. From approximately 26-feet to 48-feet (South of entry)-sediment buildup
 3. Southbound pipe blocked by old grate and trash. Pipe needs to be cleaned to continue.
- Recommendations
 1. Clean pipe.
 2. Further recommendations cannot be made as entire pipe was not able to be inspected.



1.



2.



I-20/I-26/I-126 Corridor Improvement Project

Alignment I26RA1P, Station 407+60

Structure EP-2801

36" RCP

Summary:

F&ME assessed the overall condition of a 36" RCP designated as EP-2801.

Observations:

- Dimensions – Verified 36" RCP. Length was not measured due to obstructions in pipe; plan length of 230 LF.
- Scan direction – Inlet to outfall.
- General notes – Joints on 4' spacing. 52 LF of pipe was assessed. Video was terminated due to excessive sediment and water in pipe. Outfall side is completely blocked with debris.
- Observations:
 - 1) 0.0 feet – Standing water in pipe.
 - 2) 11.6 feet – 1.01" gap in joint.
 - 3) 23.4 feet – 0.54" gap in joint.
 - 4) 27.1 feet – 0.55" gap in joint.
 - 5) 31.3 feet – 0.67" gap in joint; fine root intrusion in joint; sediment/debris in pipe.
 - 6) 36.2 feet – 0.69" gap in joint; fine root intrusion in joint.
 - 7) 43.6 feet – 0.79" gap in joint; fine root intrusion in joint.
 - 8) 47.2 feet – Chipped spigot; fine root intrusion in joint.
 - 9) 52.4 feet – Survey abandoned; excessive sediment and water in pipe.

Project Information

Surveyor Name	GCS	Certificate Number	U-0917-07009391
Owner	SCDOT	Customer	F&ME
Drainage Area		PO Number	
Pipe Segment Reference		Date	4/1/2019 13:31
Street	I-26	City	COLUMBIA
Comments			

Manhole

Upstream MH	EP 2801 INLET	Rim to Invert (U)	
Grade to Invert (U)		Rim to Grade (U)	
Downstream MH	EP 2801 OUTLET	Rim to Invert (D)	
Grade to Invert (D)		Rim to Grade (D)	
Sewer Use		Direction of Survey	Downstream

Pipe

Height (Diameter)	36	Width	
Shape	Circular	Material	Reinforced Concrete Pipe
Lining Method		Pipe Joint Length	
Total Length		Length Surveyed	52.4
Year Laid		Year Renewed	

Misc

Flow Control		Media Label	DVD
Purpose		Sewer Category	
Pre-Cleaning	Not Known	Date Cleaned	
Weather		Location Code	
Additional Info		Location Details	

Custom

Number of Taps	0	Number of Roots	10
Num Cracks / Fractures	0	Number of Broken / Holes / Collapse	1
Number of Deposits	0	Custom6	
Custom7		Struct Grade	
OM Grade		Overall Grade	

Pacp 6

Reverse Setup ID		Sheet (Group) Number	
Imperial Units (US)	True	Pressure Value	
Work Order		Project	CCR PIPE
		Completed	No

Project: CCR PIPE

Date: 4/1/2019 1:31:00 PM

Street: I-26

Length Surveyed: 52.4

Pacp Quick Overall Rating:

Height (Diameter): 36

Street: I-26

Pipe Segment Reference:



Upstream MH: EP 2801 INLET

Downstream MH: EP 2801
OUTLET

Direction of Survey:

Downstream

Material: Reinforced Concrete
Pipe



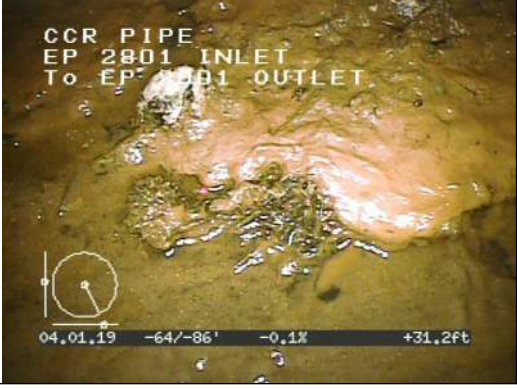
Distance	Fault Observation	Time	Picture
0.0	Discharge Point Severity: None	29	
0.0	Water Level Severity: None Percent: 10	40	
7.3	Roots Fine Joint Position: 8 Severity: None Joint Maint Weight: 1	05:42	

Distance	Fault Observation	Time	Picture
7.3	Roots Fine Joint Position: 3 To 4 Severity: None Joint Maint Weight: 1	06:11	
11.6	General Observation Severity: None Remarks: 1.011	08:14	
11.6	Roots Fine Joint Position: 4 Severity: None Joint Maint Weight: 1	08:59	

EP-2801

Distance	Fault Observation	Time	Picture
14.8	Roots Fine Joint Position: 3 To 4 Severity: None Joint Maint Weight: 1	10:19	<p>CCP PIPE EP 2801 INLET To EP 2801 OUTLET</p> <p>04,01,19 -14/-82' +0.0% +14.8ft</p>
19.2	Roots Fine Joint Position: 1 Severity: None Joint Maint Weight: 1	12:36	<p>CCP PIPE EP 2801 INLET To EP 2801 OUTLET</p> <p>04,01,19 55/-81' +5.8% +19.2ft</p>
23.4	General Observation Severity: None Remarks: 0.543	13:57	<p>CCP PIPE T To EP 2801 OUTLET</p> <p>04,01,19 67/-88' +4.8% +23.3ft</p>

EP-2801

Distance	Fault Observation	Time	Picture
27.1	General Observation Severity: None Remarks: 0.546	15:17	
31.3	General Observation Severity: None Remarks: 0.67	16:25	
31.3	Roots Fine Joint Position: 5 Severity: None Joint Maint Weight: 1	17:36	

EP-2801

Distance	Fault Observation	Time	Picture
31.3	Obstacle Other Position: 4 To 8 Severity: None Percent: 35 Remarks: DIRT MUD ETC IN PIPE Maint Weight: 5	17:55	<p>CCP PIPE EP 2801 INLET To EP 2801 OUTLET</p> <p>Root Fine Joint</p> <p>12:57 0/1' -0.1% +31.2ft</p>
36.2	Roots Fine Joint Position: 2 Severity: None Joint Maint Weight: 1	18:57	<p>12:58 42/-89' +0.6% +36.2ft</p>
36.2	General Observation Severity: None Remarks: 0.693	19:58	<p>CCP PIPE EP 2801 INLET OUTLET</p> <p>04,01,19 85/-86' +0.6% +36.2ft</p>

EP-2801

Distance	Fault Observation	Time	Picture
39.3	Roots Fine Joint Position: 10 Severity: None Joint Maint Weight: 1	20:43	
43.6	Roots Fine Joint Position: 1 To 2 Severity: None Joint Maint Weight: 1	21:57	
43.6	Roots Fine Joint Position: 11 Severity: None Joint Maint Weight: 1	22:36	

EP-2801

Distance	Fault Observation	Time	Picture
43.6	General Observation Severity: None Remarks: 0.785	23:02	
47.2	Broken Position: 1 Severity: None Joint Remarks: CHIPPED SPIGOT WITH ROOTS Struct Weight: 4	24:42	
52.4	Abandoned Survey Severity: None Remarks: TOO MUCH MUD WATER AND DEBRIS	28:36	

Created with the  report generator

EP-2801

Project: CCR PIPE

Date: 4/1/2019 1:31:00 PM

Street: I-26

Length Surveyed: 52.4

Pacp Quick Overall Rating:

Height (Diameter): 36

Street: I-26

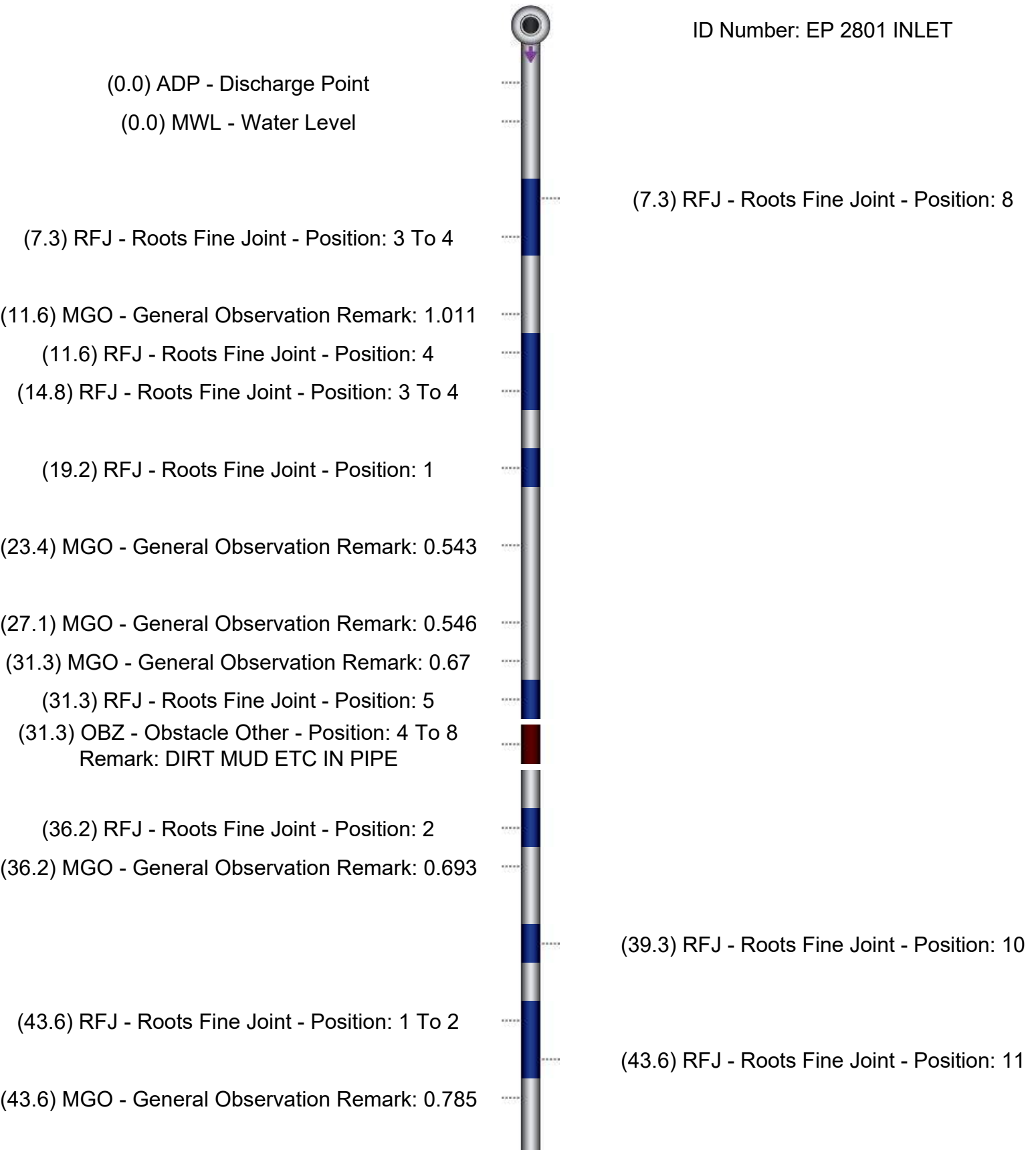
Pipe Segment Reference:

Upstream MH: EP 2801 INLET

Downstream MH: EP 2801
OUTLET

Direction of Survey:
Downstream

Material: Reinforced Concrete
Pipe



(47.2) B - Broken - Position: 1 Remark: CHIPPED
SPIGOT WITH ROOTS

(52.4) MSA - Abandoned Survey Remark: TOO
MUCH MUD WATER AND DEBRIS

Total Distance: 52.4



ID Number: EP 2801 OUTLET

Created with the  report generator

Project: CCR PIPE

Date: 4/1/2019 1:31:00 PM

Street: I-26

Length Surveyed: 52.4

Pacp Quick Overall Rating:

Height (Diameter): 36

Street: I-26

Pipe Segment Reference:

Upstream MH: EP 2801 INLET

Downstream MH: EP 2801
OUTLET

Direction of Survey:

Downstream

Material: Reinforced Concrete
Pipe

Percent Grade Mean: 3.84

Plot Distance From: 0 To 53

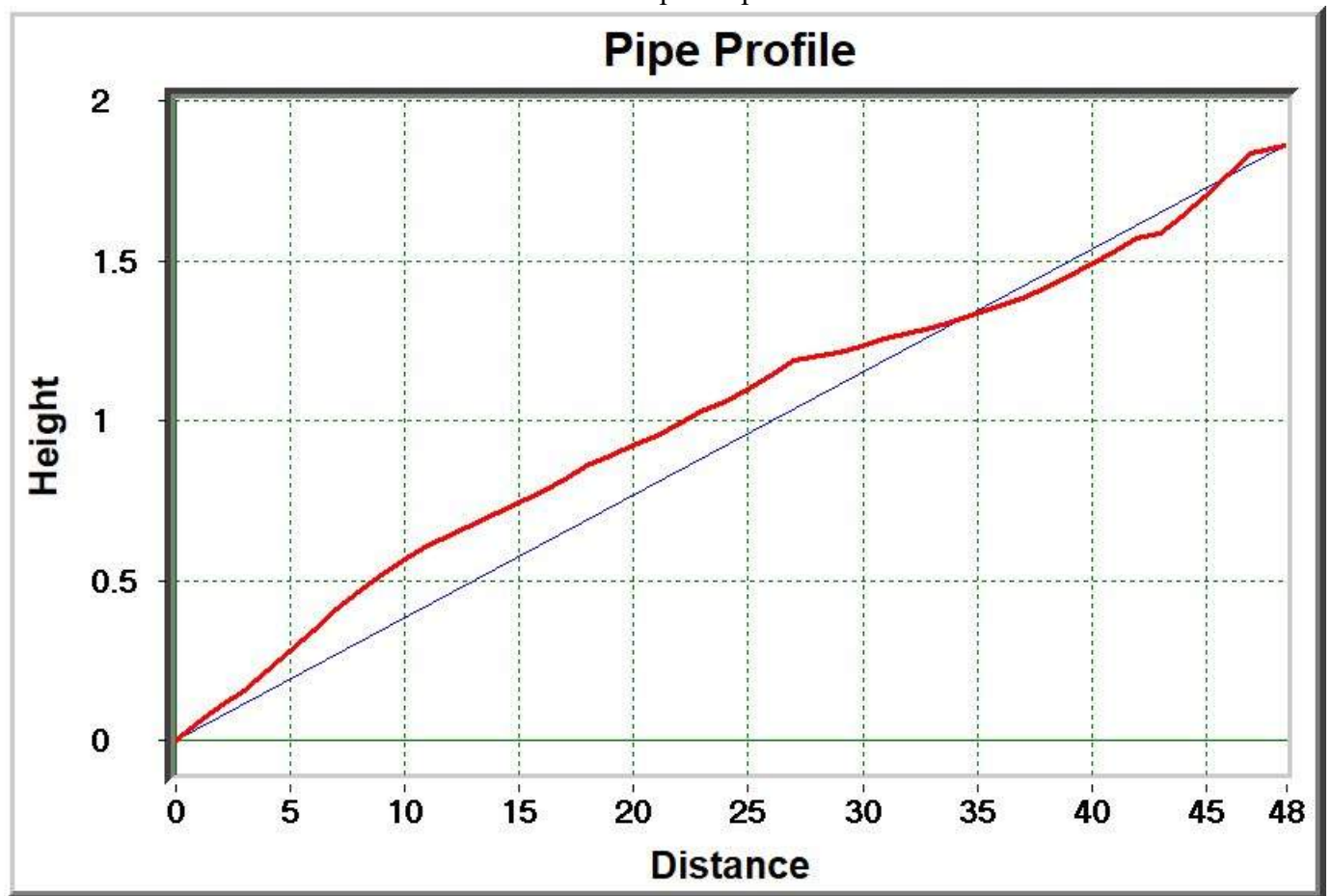
Max Percent Difference: 3

Number of Window Values: 1

Percent Difference Max for Windows Values: 60

Number of Feet to Average: 1

Final number of points plotted: 42





EP-2802 A-B

Project Information

Surveyor Name	GCS	Certificate Number	U-0917-07009391
Owner		Customer	
Drainage Area		PO Number	
Pipe Segment Reference	PIPE 2802	Date	10/30/2020 14:48
Street	I-26	City	COLUMBIA
Comments			

Manhole

Upstream MH	2802 B	Rim to Invert (U)	
Grade to Invert (U)		Rim to Grade (U)	
Downstream MH	2802 A	Rim to Invert (D)	
Grade to Invert (D)		Rim to Grade (D)	
Pipe Use	Stormwater Pipe	Direction of Survey	Upstream

Pipe

Height (Diameter)	18	Width	
Shape	Circular	Material	Reinforced Concrete Pipe
Lining Method		Pipe Joint Length	
Total Length	51	Length Surveyed	51
Year Constructed		Year Renewed	

Misc

Flow Control		Media Label	DVD
Purpose		Consequence of Failure	
Pre-Cleaning	No Pre-Cleaning	Date Cleaned	
Weather		Location Code	
Additional Info		Location Details	

Custom

Custom 1	Custom 2
Custom 3	Custom 4
Custom 5	Custom 6
Custom 7	Custom 8
Custom 9	Custom 10

Project			
Reverse Setup ID		Sheet (Group) Number	
Imperial Units (US)		Pressure Value	
Work Order		Project	
		CAROLINA CROSSROADS	

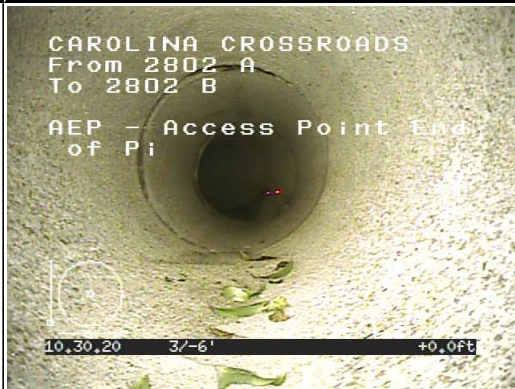
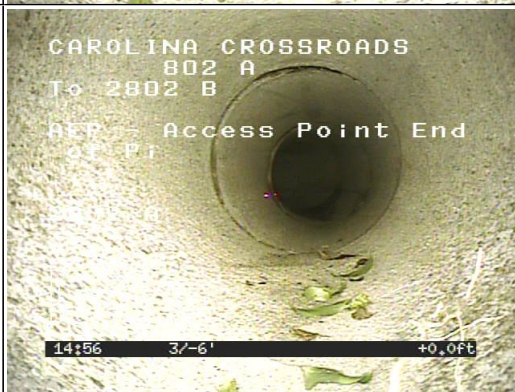

EP-2802 A-B



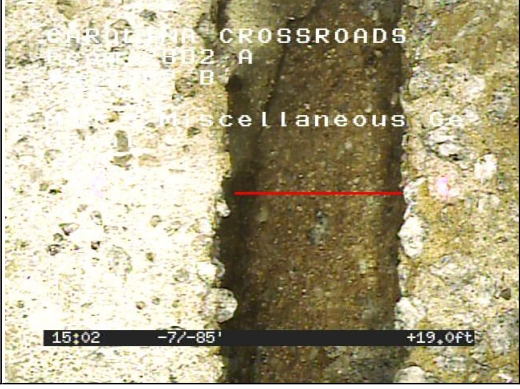
Coating Method		Completed	
		Yes	
Insp Tech Used			
CCTV	Yes	Laser	No
Sidewall	No	Sonar	No
Zoom	No	Other	No

Inspection	
Inspection Status	Complete Inspection
Reviewed By	Reviewer Certificate Number

Count Groups			
Taps	0	Roots	2
Cracks / Fractures	1	Broken / Holes / Collapse	0
Deposits	0	Obstruction	0
Abandoned Survey	0		

Project: CAROLINA CROSSROADS	
Date: 10/30/2020 2:48:00 PM	Pipe Segment Reference: PIPE 2802
Street: I-26	Upstream MH: 2802 B
Length Surveyed: 51	Downstream MH: 2802 A
Run Number:	Direction of Survey: Upstream
Height (Diameter): 18	Material: Reinforced Concrete Pipe

Distance	Fault Observation	Time	Picture
0.0	Access Point End of Pipe Severity: None Remarks: 2802 A	16	
0.0	Miscellaneous Water Level Severity: None Percent: 0	31	
10.9	Roots Fine Joint Position: 3 Severity: None Joint Maint Weight: 1	02:09	

Distance	Fault Observation	Time	Picture
10.9	Miscellaneous General Observation Severity: None Remarks: GAP OBSERVATION 1.62	03:07	
15.3	Line Left Severity: None Percent: 20 Remarks: LINE TURNS LEFT 10 DEGREES Maint Weight: 2	04:22	
19.0	Miscellaneous General Observation Severity: None Remarks: GAP OBSERVATION 1.209	6:10	

EP-2802 A-B

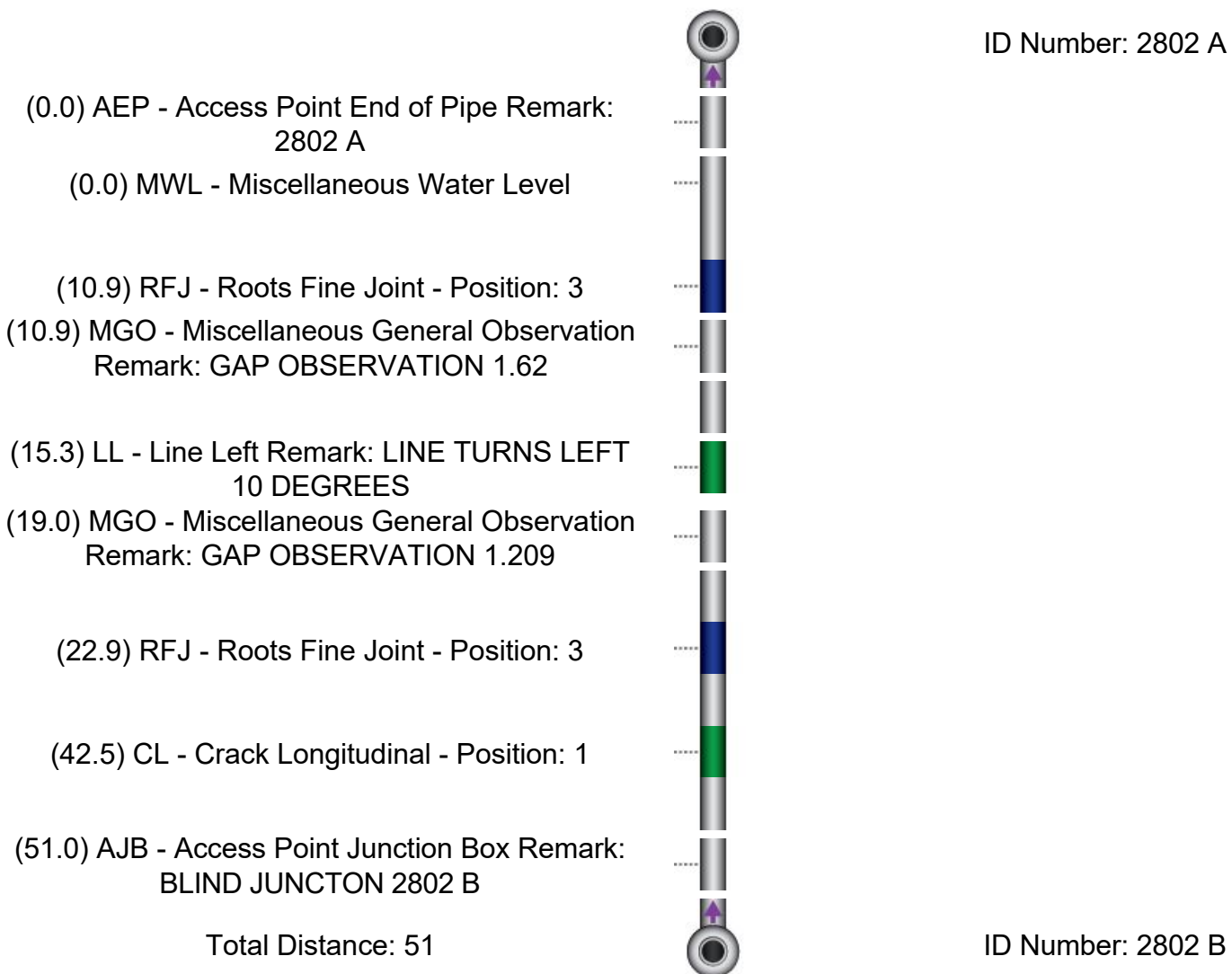
Distance	Fault Observation	Time	Picture
22.9	Roots Fine Joint Position: 3 Severity: None Joint Maint Weight: 1	07:14	
42.5	Crack Longitudinal Position: 1 Severity: None Joint Struct Weight: 2	11:00	
51.0	Access Point Junction Box Severity: None Remarks: BLIND JUNCTION 2802 B	12:44	

Created with the  report generator

EP-2802 A-B

Project: CAROLINA CROSSROADS	
Date: 10/30/2020 2:48:00 PM	Pipe Segment Reference: PIPE 2802
Street: I-26	Upstream MH: 2802 B
Length Surveyed: 51	Downstream MH: 2802 A
Run Number:	Direction of Survey: Upstream
Height (Diameter): 18	Material: Reinforced Concrete Pipe

Severity
Light-1
Moderate-2
Average-3
Heavy-4
Severe-5



Nassco C.C.T.V. Defect Code Information

Grade	Structural	O&M	Overall
5	0	0	0
4	0	0	0
3	0	0	0
2	2	2	4
1	0	2	2
Overall	2	4	6
Number of Defects	1	3	4
Pipe Rating	2100	2112	2212
Pipe Ratings Index	2	1.3	1.5

Nassco C.C.T.V. Defect Code Information

EP-2802 A-B

EP-2802 A-B

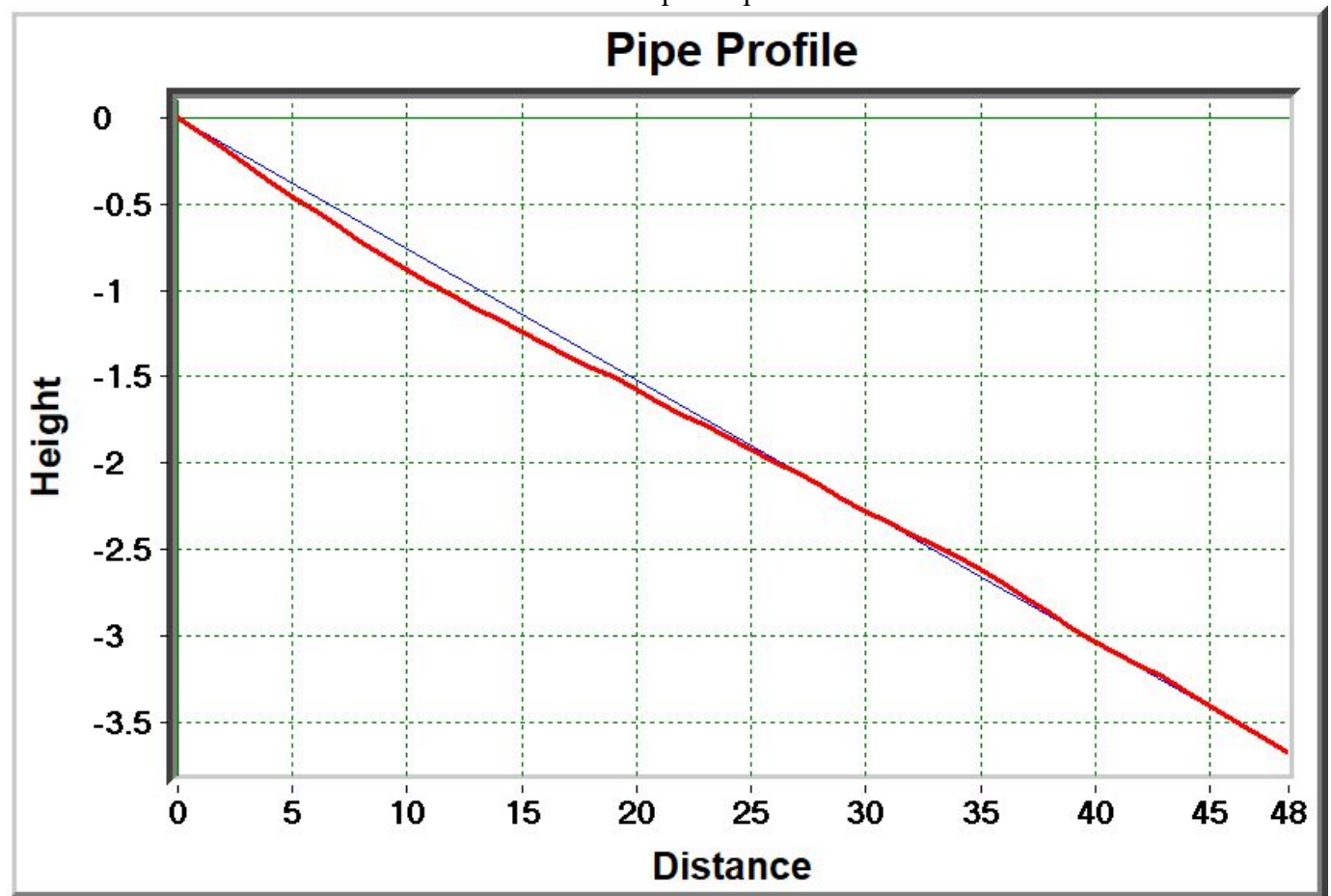
Distance	Video Ref	Code	Cont Defect	Value			Joint	Circumferential Location		
				Dimension		%		At / From	To	
				1st	2nd					
0	16	AEP - Access Point End of Pipe								
		2802 A								
0	31	MWL - Miscellaneous Water Level				0				
10.9	129	RFJ - Roots Fine Joint					X			3
10.9	187	MGO - Miscellaneous General Observation								
		GAP OBSERVATION 1.62								
15.3	262	LL - Line Left				20				
		LINE TURNS LEFT 10 DEGREES								
19	370	MGO - Miscellaneous General Observation								
		GAP OBSERVATION 1.209								
22.9	434	RFJ - Roots Fine Joint					X	3		
42.5	660	CL - Crack Longitudinal					X	1		
51	764	AJB - Access Point Junction Box								
		BLIND JUNCTON 2802 B								

Project: CAROLINA CROSSROADS

Date: 10/30/2020 2:48:00 PM	Pipe Segment Reference: PIPE 2802
Street: I-26	Upstream MH: 2802 B
Length Surveyed: 51	Downstream MH: 2802 A
Run Number:	Direction of Survey: Upstream
Height (Diameter): 18	Material: Reinforced Concrete Pipe

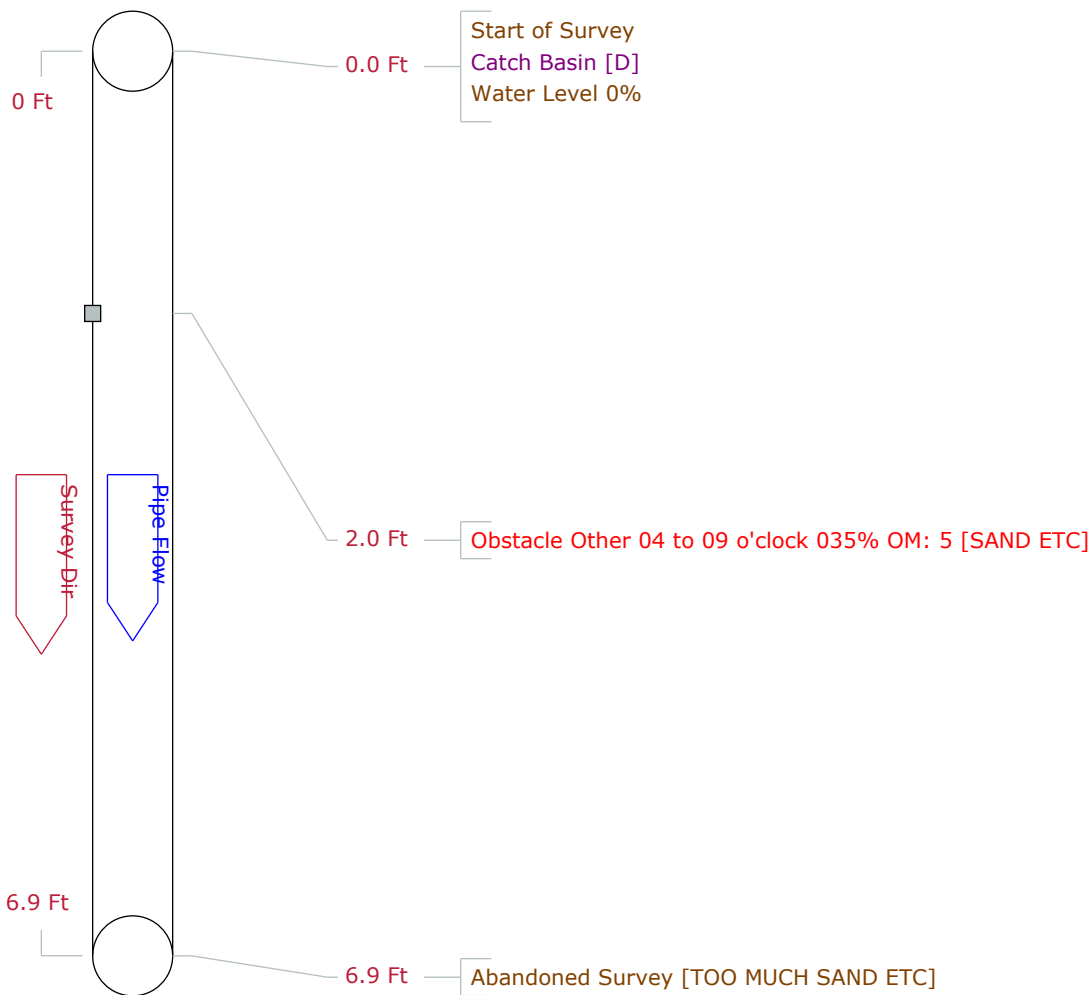
EP-2802 A-B

Percent Grade Mean: -7.62
Plot Distance From: 0 To 52
Max Percent Difference: 3
Number of Window Values: 1
Percent Difference Max for Windows Values: 60
Number of Feet to Average: 1
Final number of points plotted: 49



Pipe Graphic Report of PSR 2802 D
 for HDR

Setup	4	Surveyor	GCS	Certificate #	U-0917-07009391	System Owner	SCDOT	
Drainage	Survey Customer							
P/O #	Date 2020/11/09		Time 11:50		Street I-26			
City	WEST COLUMBIA		Further location details					
Up	2802 D		Rim to invert		Grade to invert		Rim to grade	Ft
Down	2802 C		Rim to invert		Grade to invert		Rim to grade	Ft
Use	Stormwater		Direction	Downstream	Flow control		Media No	
Shape	Circular		Height	18	Width	ins	Preclean Z	Date Cleaned
Material	Reinforced Concrete Pipe		Joint length	Ft	Total length	Ft	Length Surveyed	06.90 Ft
Lining			Year laid		Year rehabilitated		Weather	
Purpose					Cat			
Additional info	WEST BOUND BEFORE I-126				Structural		O & M	Constructional
Location					Miscellaneous		Hydraulic	
Project	Carolina Crossroads				Work Order			
Northing	Easting				Elevation			
Coordinate System					GPS Accuracy			

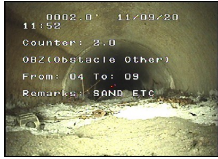


CCTV Picture List of

2802 D

for HDR

Work Order	Setup 4
Video	Survey Date 2020/11/09
Path to picture files	E:\CAMERA WORK DATABASE\Snaps\CAROLNA CROSSROADS\
Path to video files	E:\CAMERA WORK DATABASE\Movies\CAROLNA CROSSROADS\
Path to media files	E:\CAMERA WORK DATABASE\Media\CAROLNA CROSSROADS\



Video Index **Count** 2.0 Ft
Code Obstacle Other
Remarks SAND ETC
File Name 23.jpg



Video Index **Count** 2.0 Ft
Code Obstacle Other
Remarks SAND ETC
File Name 24.jpg



PiPELOGIX

SCA Underground

Phone: (803)730-3568

Address: PO box Suite 102, West Columbia, SC

Tabular Report of PSR 2802 D

for HDR

Setup	4	Surveyor	GCS	Certificate #	U-0917-07009391	System Owner	SCDOT
Drainage		Survey Customer					
P/O #		Date	2020/11/09	Time	11:50	Street	I-26
City	WEST COLUMBIA	Further location details					
Up	2802 D	Rim to invert		Grade to invert		Rim to grade	Ft
Down	2802 C	Rim to invert		Grade to invert		Rim to grade	Ft
Use	Stormwater	Direction	Down	Flow control		Media No	
Shape	Circular	Height	18	Width	ins	Preclean Z	Date Cleaned
Material	Reinforced Concrete Pipe	Joint length		Ft	Total length	Ft	Length Surveyed 6.9
Lining		Year laid		Year rehabilitated		Weather	
Purpose		Cat				Pressure	
Additional info	WEST BOUND BEFORE I-126					Structural	O & M
Location						Miscellaneous	Constructional
Project	Carolina Crossroads					Work Order	
Northing						Elevation	
Coordinate System						GPS Accuracy	

Count	Video	CD	Code	In1	In2	%	JntFr	To	ImRef	Remarks
0.0			ST							Start of Survey
0.0			ACB							Catch Basin
0.0			MWL			0				Water Level
2.0			OBZ			35	04	09		Obstacle Other
6.9			MSA							Abandoned Survey

6.9 Ft Total Length Surveyed

Scores	Structural:	Pipe Rating	0	Pipe Ratings Index	0	Quick Rating	0000
	O&M:	Pipe Rating	5	Pipe Ratings Index	2.5	Quick Rating	5100
	Overall	Pipe Rating	5	Pipe Ratings Index	2.5	Quick Rating	5100



SCA Underground
Phone:(803)730-3568



EP-2803 A-B

Project Information

Surveyor Name	GCS	Certificate Number	U-0917-07009391
Owner		Customer	
Drainage Area		PO Number	
Pipe Segment Reference	PIPE 2803	Date	10/30/2020 11:22
Street	I-26	City	COLUMBIA
Comments			

Manhole

Upstream MH	2803 A	Rim to Invert (U)	
Grade to Invert (U)		Rim to Grade (U)	
Downstream MH	2803 B	Rim to Invert (D)	
Grade to Invert (D)		Rim to Grade (D)	
Pipe Use	Stormwater Pipe	Direction of Survey	Downstream

Pipe

Height (Diameter)	18	Width	
Shape	Circular	Material	Reinforced Concrete Pipe
Lining Method		Pipe Joint Length	
Total Length	60.6	Length Surveyed	60.6
Year Constructed		Year Renewed	

Misc

Flow Control		Media Label	DVD
Purpose		Consequence of Failure	
Pre-Cleaning	No Pre-Cleaning	Date Cleaned	
Weather		Location Code	
Additional Info		Location Details	

Custom

Custom 1	Custom 2
Custom 3	Custom 4
Custom 5	Custom 6
Custom 7	Custom 8
Custom 9	Custom 10

Project			
Reverse Setup ID		Sheet (Group) Number	
Imperial Units (US)		Pressure Value	
Work Order		Project	
		CAROLINA CROSSROADS	

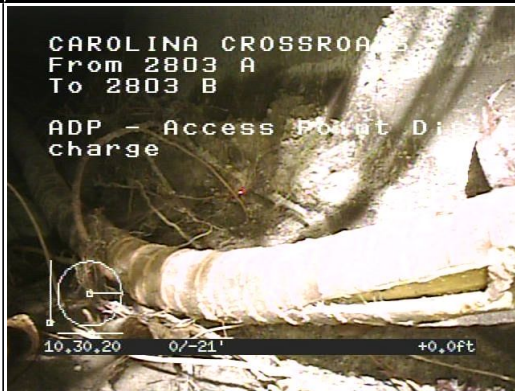


EP-2803 A-B

Coating Method		Completed	
		Yes	
Insp Tech Used			
CCTV	Yes	Laser	No
Sidewall	No	Sonar	No
Zoom	No	Other	No

Inspection	
Inspection Status	Complete Inspection
Reviewed By	Reviewer Certificate Number

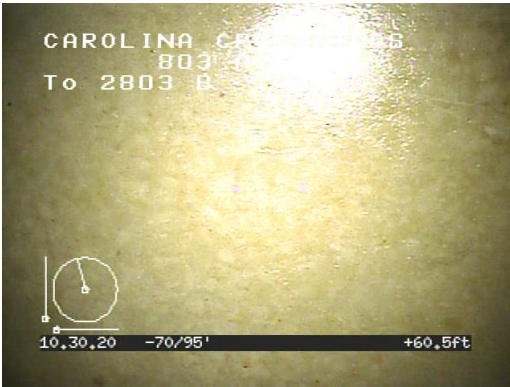
Count Groups			
Taps	0	Roots	3
Cracks / Fractures	0	Broken / Holes / Collapse	0
Deposits	0	Obstruction	0
Abandoned Survey	0		

Project: CAROLINA CROSSROADS	
Date: 10/30/2020 11:22:00 AM	Pipe Segment Reference: PIPE 2803
Street: I-26	Upstream MH: 2803 A
Length Surveyed: 60.6	Downstream MH: 2803 B
Run Number:	Direction of Survey: Downstream
Height (Diameter): 18	Material: Reinforced Concrete Pipe

Distance	Fault Observation	Time	Picture
0.0	Access Point Discharge Point Severity: None Remarks: 2803 A	15	
0.0	Miscellaneous Water Level Severity: None Percent: 0	31	
0.0	Roots Medium Connection Position: 3 To 7 Severity: None Percent: 20 Remarks: ROOT AT INLET Maint Weight: 3	01:25	

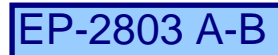
Distance	Fault Observation	Time	Picture
4.0	Roots Fine Joint Position: 6 Severity: None Cont Defect: S01 Joint Remarks: LARGE ROOT ALONG INSIDE OF PIPE FLOOR Maint Weight: 1	07:59	
8.5	Surface Damage Aggregate Missing Position: 10 To 1 Severity: None Joint Remarks: REBAR EXPOSED Struct Weight: 4	04:56	
24.4	Roots Fine Barrel Position: 6 Severity: None Cont Defect: F01 Remarks: LARGE ROOT ALONG INSIDE OF PIPE FLOOR Maint Weight: 2	09:25	

EP-2803 A-B

Distance	Fault Observation	Time	Picture
60.6	<p>Access Point Junction Box Severity: None Remarks: HIDDEN JUNCTION 2803 B</p>	16:20	

Created with the  report generator

EP-2803 A-B



Date: 10/30/2020 11:22:00 AM	Pipe Segment Reference: PIPE 2803
Street: I-26	Upstream MH: 2803 A
Length Surveyed: 60.6	Downstream MH: 2803 B
Run Number:	Direction of Survey: Downstream
Height (Diameter): 18	Material: Reinforced Concrete Pipe

Severity
Light-1
Moderate-2
Average-3
Heavy-4
Severe-5



Nassco C.C.T.V. Defect Code Information

Grade	Structural	O&M	Overall
5	0	0	0
4	4	0	4
3	0	3	3
2	0	8	8
1	0	0	0
Overall	4	11	15
Number of Defects	1	5	6
Pipe Rating	4100	3124	4131
Pipe Ratings Index	4	2.2	2.5

Nassco C.C.T.V. Defect Code Information

EP-2803 A-B

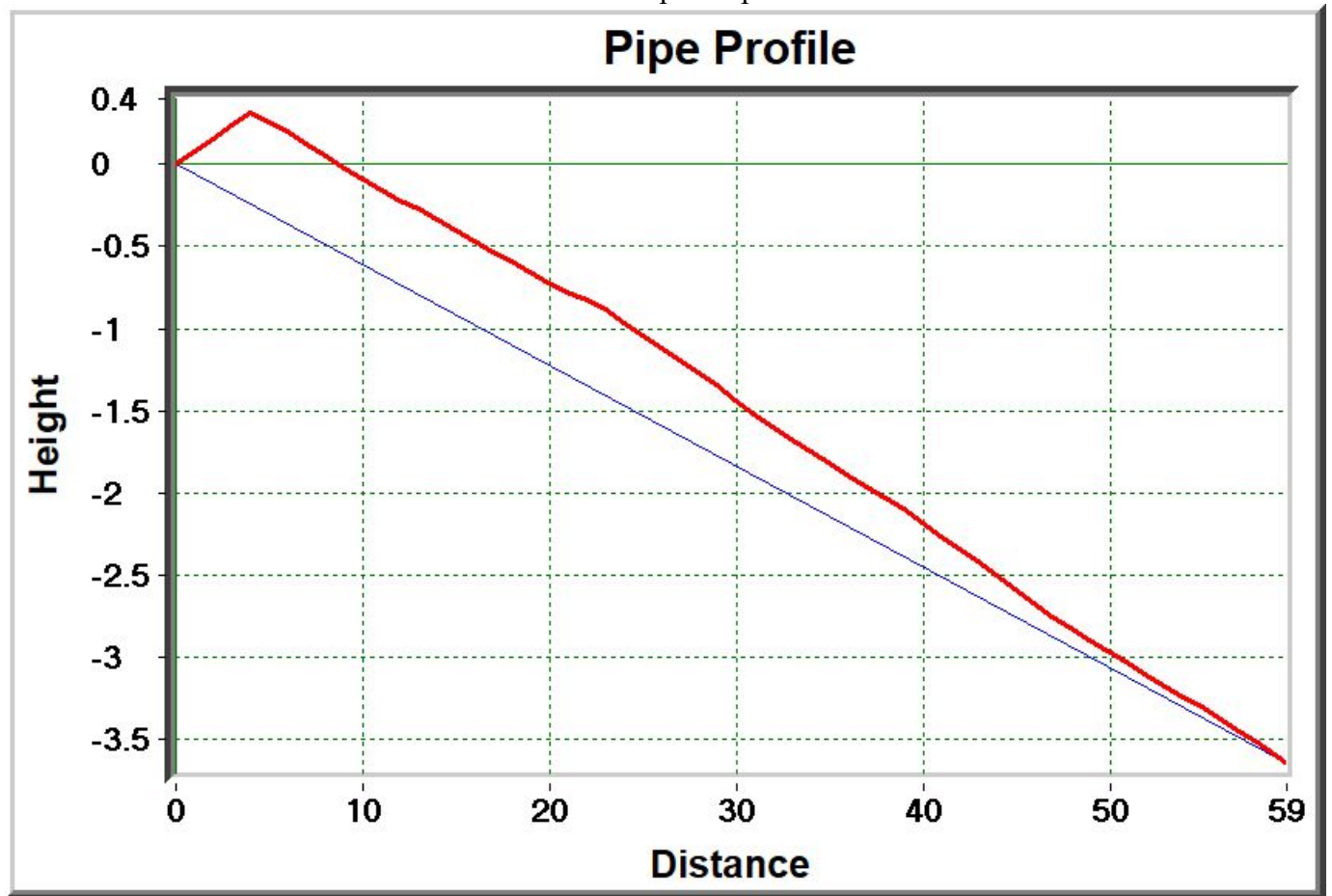
EP-2803 A-B

Distance	Video Ref	Code	Cont Defect	Value			Joint	Circumferential Location	
				Dimension		%		At / From	To
				1st	2nd				
0	15	ADP - Access Point Discharge Point							
		2803 A							
0	31	MWL - Miscellaneous Water Level				0			
0	85	RMC - Roots Medium Connection				20		3	7
		ROOT AT INLET							
4	479	RFJ - Roots Fine Joint	S01				X	6	
		LARGE ROOT ALONG INSIDE OF PIPE FLOOR							
8.5	296	SAM - Surface Damage Aggregate Missing				X	10	1	
		REBAR EXPOSED							
24.4	565	RFB - Roots Fine Barrel	F01					6	
		LARGE ROOT ALONG INSIDE OF PIPE FLOOR							
60.6	980	AJB - Access Point Junction Box							
		HIDDEN JUNCTION 2803 B							

Project: CAROLINA CROSSROADS	
Date: 10/30/2020 11:22:00 AM	Pipe Segment Reference: PIPE 2803
Street: I-26	Upstream MH: 2803 A
Length Surveyed: 60.6	Downstream MH: 2803 B
Run Number:	Direction of Survey: Downstream
Height (Diameter): 18	Material: Reinforced Concrete Pipe

Percent Grade Mean: -5.83
 Plot Distance From: 0 To 62
 Max Percent Difference: 3
 Number of Window Values: 1
 Percent Difference Max for Windows Values: 60
 Number of Feet to Average: 1
 Final number of points plotted: 58

EP-2803 A-B





EP-2803 B-C

Project Information

Surveyor Name	GCS	Certificate Number	U-0917-07009391
Owner		Customer	
Drainage Area		PO Number	
Pipe Segment Reference	PIPE 2803	Date	10/30/2020 11:52
Street	I-26	City	COLUMBIA
Comments			

Manhole

Upstream MH	2803 B	Rim to Invert (U)	
Grade to Invert (U)		Rim to Grade (U)	
Downstream MH	2803 C	Rim to Invert (D)	
Grade to Invert (D)		Rim to Grade (D)	
Pipe Use	Stormwater Pipe	Direction of Survey	Downstream

Pipe

Height (Diameter)	18	Width	
Shape	Circular	Material	Reinforced Concrete Pipe
Lining Method		Pipe Joint Length	
Total Length	59.4	Length Surveyed	59.4
Year Constructed		Year Renewed	

Misc

Flow Control		Media Label	DVD
Purpose		Consequence of Failure	
Pre-Cleaning	No Pre-Cleaning	Date Cleaned	
Weather		Location Code	
Additional Info		Location Details	

Custom

Custom 1	Custom 2
Custom 3	Custom 4
Custom 5	Custom 6
Custom 7	Custom 8
Custom 9	Custom 10

Project			
Reverse Setup ID		Sheet (Group) Number	
Imperial Units (US)		Pressure Value	
Work Order		Project	
		CAROLINA CROSSROADS	




EP-2803 B-C

Coating Method		Completed	
		Yes	
Insp Tech Used			
CCTV	Yes	Laser	No
Sidewall	No	Sonar	No
Zoom	No	Other	No

Inspection	
Inspection Status	Complete Inspection
Reviewed By	Reviewer Certificate Number

Count Groups			
Taps	0	Roots	0
Cracks / Fractures	0	Broken / Holes / Collapse	0
Deposits	0	Obstruction	0
Abandoned Survey	0		

Project: CAROLINA CROSSROADS	
Date: 10/30/2020 11:52:00 AM	Pipe Segment Reference: PIPE 2803
Street: I-26	Upstream MH: 2803 B
Length Surveyed: 59.4	Downstream MH: 2803 C
Run Number:	Direction of Survey: Downstream
Height (Diameter): 18	Material: Reinforced Concrete Pipe

Distance	Fault Observation	Time	Picture
0.0	Access Point Junction Box Severity: None Remarks: HIDDEN JUNCTION 2803 B	17	
0.0	Miscellaneous Water Level Severity: None Percent: 0	32	
59.4	Access Point Discharge Point Severity: None Remarks: BURRIED END OF PIPE AT 2803 C	11:16	



EP-2803 B-C

Project: CAROLINA CROSSROADS	
Date: 10/30/2020 11:52:00 AM	Pipe Segment Reference: PIPE 2803
Street: I-26	Upstream MH: 2803 B
Length Surveyed: 59.4	Downstream MH: 2803 C
Run Number:	Direction of Survey: Downstream
Height (Diameter): 18	Material: Reinforced Concrete Pipe

Severity
Light-1
Moderate-2
Average-3
Heavy-4
Severe-5

(0.0) AJB - Access Point Junction Box Remark:
HIDDEN JUNCTION 2803 B

(0.0) MWL - Miscellaneous Water Level

(59.4) ADP - Access Point Discharge Point
Remark: BURIED END OF PIPE AT 2803 C

Total Distance: 59.4



ID Number: 2803 B

ID Number: 2803 C

Created with the  report generator

Nassco C.C.T.V. Defect Code Information

Grade	Structural	O&M	Overall
5	0	0	0
4	0	0	0
3	0	0	0
2	0	0	0
1	0	0	0
Overall	0	0	0
Number of Defects	0	0	0
Pipe Rating	0000	0000	0000
Pipe Ratings Index	0	0	0

Nassco C.C.T.V. Defect Code Information

EP-2803 B-C

Distance	Video Ref	Code	Cont Defect	Value			Joint	Circumferential Location	
				Dimension		%		At / From	To
				1st	2nd				
0	17	AJB - Access Point Junction Box							
		HIDDEN JUNCTION 2803 B							
0	32	MWL - Miscellaneous Water Level				0			
59.4	676	ADP - Access Point Discharge Point							
		BURRIED END OF PIPE AT 2803 C							

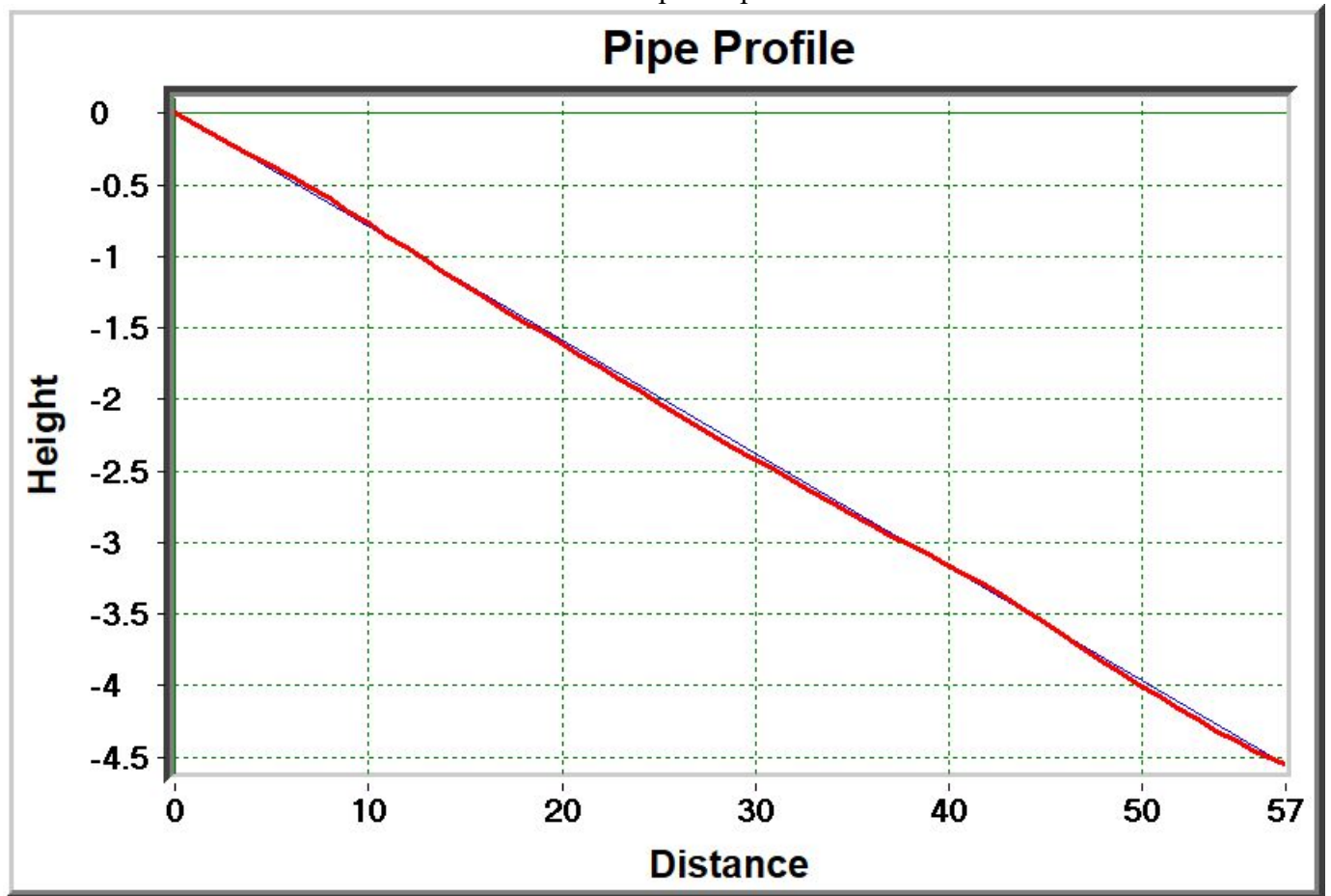
Created with the  report generator

EP-2803 B-C

Project: CAROLINA CROSSROADS	
Date: 10/30/2020 11:52:00 AM	Pipe Segment Reference: PIPE 2803
Street: I-26	Upstream MH: 2803 B
Length Surveyed: 59.4	Downstream MH: 2803 C
Run Number:	Direction of Survey: Downstream
Height (Diameter): 18	Material: Reinforced Concrete Pipe

Percent Grade Mean: -7.97
 Plot Distance From: 0 To 60
 Max Percent Difference: 3
 Number of Window Values: 1
 Percent Difference Max for Windows Values: 60
 Number of Feet to Average: 1
 Final number of points plotted: 56

EP-2803 B-C



EC-2901

I-20/I-26/I-126 Corridor Improvement Project

Alignment I26RA1P, Station 429+45

Structure EC-2901

10' x 10' RCBC

Summary:

F&ME assessed the overall condition of a 10' x 10' RCBC designated as EC-2901.

Observations:

- Dimensions – Verified 10' x 10' RCBC. Measured length of 175 LF; plan length of 176 LF.
- Scan direction – Outfall to inlet.
- General notes – None
- Observations:
 - 1) 15 feet – Transverse cracking on left and right sides.
 - 2) 30 feet – Transverse cracking on left and right sides.
 - 3) 40 feet – Transverse cracking on right side.
 - 4) 43 feet – Transverse cracking on left side.
 - 5) 66 feet – 0.70" separation at joint.
 - 6) 91 feet – Transverse cracking with exposed rebar on right side.
 - 7) 93 feet – Transverse crack on top of culvert.
 - 8) 97 feet – Transverse crack on left side and top of culvert.
 - 9) 98 to 102 feet – Spalled concrete with exposed rebar on right side.
 - 10) 115 feet – Spalled concrete with exposed rebar on right side.
 - 11) 125 feet – 0.60" separation at joint.
 - 12) 139 feet – Transverse crack on right side.
 - 13) 146 feet – Transverse cracking on left and right sides.
 - 14) 151 feet – Concrete spalling on right side near top corner.



15' – Lt side
Transverse Cracking



15' – Lt side
Transverse Cracking



15' – Rt side
Transverse Cracking



15' – Rt side
Transverse Cracking



30' – Lt side
Transverse Cracking



30' – Lt side
Transverse Cracking



30' – Lt side
Transverse Cracking



30' – Rt side
Transverse Cracking



30' – Rt side
Transverse Cracking



40' – Rt side
Transverse Cracking



40' – Rt side
Transverse Cracking



43' – Lt side
Transverse Cracking



100_5509



43' – Lt side
Transverse Cracking



100_5511



43' – Lt side
Transverse Cracking



66' – Lt side
Separation at joint



66' – Lt side
Separation at joint



66' – Top
Separation at joint



66' – Top
Separation at joint



66' – Rt side
Separation at joint



66' – Rt side
Separation at joint



66' – Lt side
Separation at joint



91' – Rt side
Transverse Cracking with exposed rebar



91' – Rt side
Transverse Cracking with exposed rebar



91' – Rt side
Transverse Cracking with exposed rebar



91' – Rt side
Transverse Cracking with exposed rebar



93' – Top
Transverse Cracking



93' – Top
Horizontal crack



97' – Lt side
Vertical crack



97' – Lt side
Transverse Cracking



97' – Top
Transverse Cracking



97' – Top
Transverse Cracking



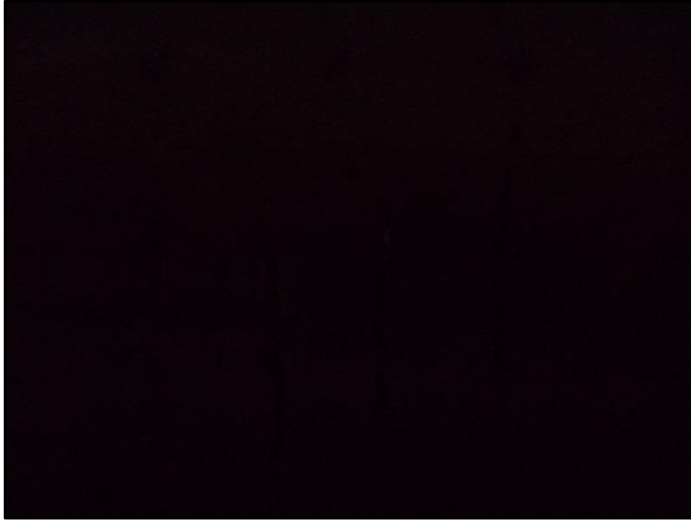
98 – 102' – Rt side
Exposed rebar



98 – 102' – Rt side
Exposed rebar



98 – 102' – Rt side
Exposed rebar



100_5537



98 – 102' – Rt side
Exposed rebar



115' – Rt side
Exposed rebar



115' – Rt side
Exposed rebar



125' – Lt side
Separation at joint



125' – Lt side
Separation at joint



125' – Top
Separation at joint



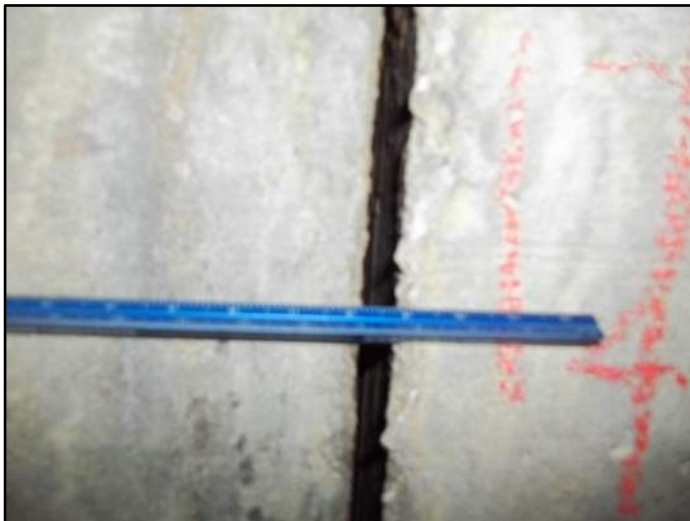
125' – Top
Separation at joint



125' – Rt side
Separation at joint



125' – Rt side
Separation at joint



125' – Lt side
Separation at joint



139' – Rt side
Transverse Cracking



146' – Lt side
Transverse Cracking



100_5551



146' – Lt side
Transverse Cracking



146' – Rt side
Transverse Cracking



146' – Rt side
Transverse Cracking



146' – Rt side
Transverse Cracking



151' – Rt side
Spalling at top corner



151' – Rt side
Spalling at top corner



EP-4801 A-B

Project Information

Surveyor Name	GCS	Certificate Number	U-0917-07009391
Owner		Customer	
Drainage Area		PO Number	
Pipe Segment Reference	4801	Date	10/6/2020 14:27
Street	LAWAND DR	City	COLUMBIA
Comments			

Manhole

Upstream MH	4801 A	Rim to Invert (U)	
Grade to Invert (U)		Rim to Grade (U)	
Downstream MH	4801 B	Rim to Invert (D)	
Grade to Invert (D)		Rim to Grade (D)	
Pipe Use	Stormwater Pipe	Direction of Survey	Downstream

Pipe

Height (Diameter)	48	Width	
Shape	Circular	Material	Reinforced Concrete Pipe
Lining Method		Pipe Joint Length	
Total Length	43.7	Length Surveyed	43.7
Year Constructed		Year Renewed	

Misc

Flow Control		Media Label	DVD
Purpose		Consequence of Failure	
Pre-Cleaning	No Pre-Cleaning	Date Cleaned	
Weather		Location Code	
Additional Info		Location Details	

Custom

Custom 1	Custom 2
Custom 3	Custom 4
Custom 5	Custom 6
Custom 7	Custom 8
Custom 9	Custom 10

Project			
Reverse Setup ID		Sheet (Group) Number	
Imperial Units (US)		Pressure Value	
Work Order		Project	
		CAROLINA CROSSROADS	

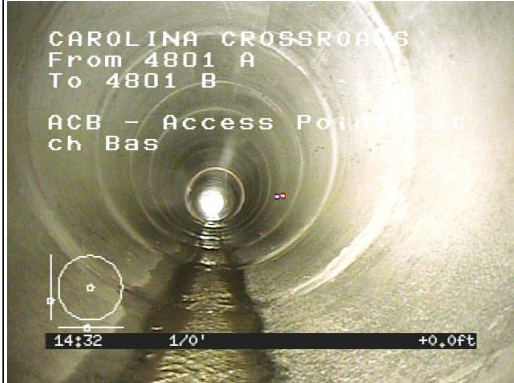


EP-4801 A-B

Coating Method		Completed	
		Yes	
Insp Tech Used			
CCTV	Yes	Laser	No
Sidewall	No	Sonar	No
Zoom	No	Other	No

Inspection	
Inspection Status	Complete Inspection
Reviewed By	Reviewer Certificate Number

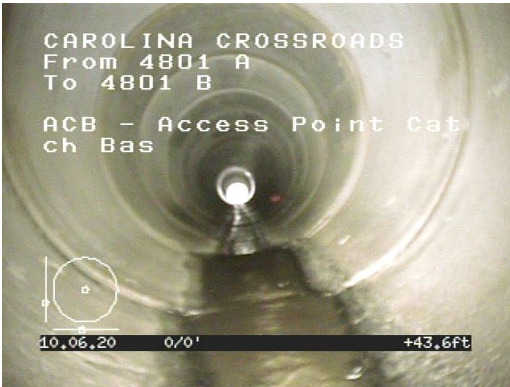
Count Groups			
Taps	0	Roots	0
Cracks / Fractures	1	Broken / Holes / Collapse	0
Deposits	0	Obstruction	0
Abandoned Survey	0		

Project: CAROLINA CROSSROADS	
Date: 10/6/2020 2:27:00 PM	Pipe Segment Reference: 4801
Street: LAWAND DR	Upstream MH: 4801 A
Length Surveyed: 43.7	Downstream MH: 4801 B
Run Number:	Direction of Survey: Downstream
Height (Diameter): 48	Material: Reinforced Concrete Pipe

Distance	Fault Observation	Time	Picture
0.0	Access Point Catch Basin Severity: None Remarks: 4801 A	17	
0.0	Miscellaneous Water Level Severity: None Percent: 5	36	
10.0	Miscellaneous General Observation Severity: None Remarks: GAP OBSERVATION 0.782	03:15	

Distance	Fault Observation	Time	Picture
17.6	Miscellaneous General Observation Severity: None Remarks: GAP OBSERVATION 1.474	05:46	
29.6	Crack Longitudinal Position: 12 Severity: None Joint Struct Weight: 2	08:27	
29.7	Miscellaneous General Observation Severity: None Remarks: GAP OBSERVATION 1.258	09:31	

EP-4801 A-B

Distance	Fault Observation	Time	Picture
43.7	Access Point Catch Basin Severity: None Remarks: 4801 B	11:36	

Created with the  report generator

EP-4801 A-B

Project: CAROLINA CROSSROADS	
Date: 10/6/2020 2:27:00 PM	Pipe Segment Reference: 4801
Street: LAWAND DR	Upstream MH: 4801 A
Length Surveyed: 43.7	Downstream MH: 4801 B
Run Number:	Direction of Survey: Downstream
Height (Diameter): 48	Material: Reinforced Concrete Pipe

Severity

Light-1

Moderate-2

Average-3

Heavy-4

Severe-5

ID Number: 4801 A

(0.0) ACB - Access Point Catch Basin Remark:
4801 A

(0.0) MWL - Miscellaneous Water Level

(10.0) MGO - Miscellaneous General Observation
Remark: GAP OBSERVATION 0.782

(17.6) MGO - Miscellaneous General Observation
Remark: GAP OBSERVATION 1.474

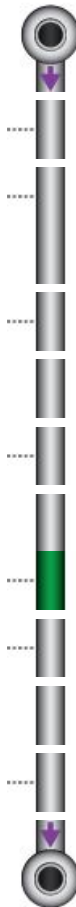
(29.6) CL - Crack Longitudinal - Position: 12

(29.7) MGO - Miscellaneous General Observation
Remark: GAP OBSERVATION 1.258

(43.7) ACB - Access Point Catch Basin Remark:
4801 B

Total Distance: 43.7

ID Number: 4801 B



Nassco C.C.T.V. Defect Code Information

Grade	Structural	O&M	Overall
5	0	0	0
4	0	0	0
3	0	0	0
2	2	0	2
1	0	0	0
Overall	2	0	2
Number of Defects	1	0	1
Pipe Rating	2100	0000	2100
Pipe Ratings Index	2	0	2

Nassco C.C.T.V. Defect Code Information

EP-4801 A-B

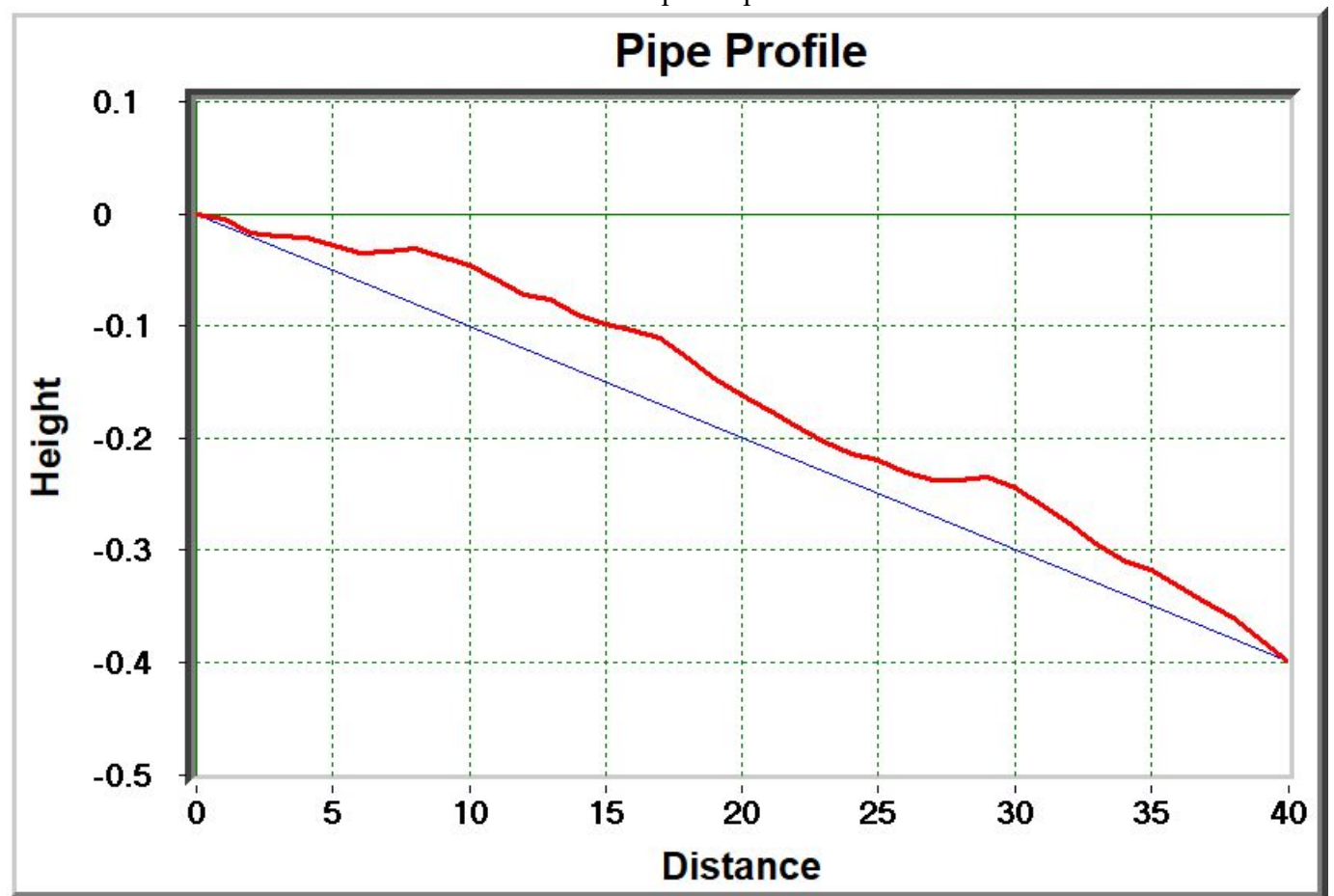
EP-4801 A-B

Distance	Video Ref	Code	Cont Defect	Value			Joint	Circumferential Location	
				Dimension		%		At / From	To
				1st	2nd				
0	17	ACB - Access Point Catch Basin							
		4801 A							
0	36	MWL - Miscellaneous Water Level				5			
10	195	MGO - Miscellaneous General Observation							
		GAP OBSERVATION 0.782							
17.6	346	MGO - Miscellaneous General Observation							
		GAP OBSERVATION 1.474							
29.6	507	CL - Crack Longitudinal				X	12		
29.7	571	MGO - Miscellaneous General Observation							
		GAP OBSERVATION 1.258							
43.7	696	ACB - Access Point Catch Basin							
		4801 B							

Project: CAROLINA CROSSROADS	
Date: 10/6/2020 2:27:00 PM	Pipe Segment Reference: 4801
Street: LAWAND DR	Upstream MH: 4801 A
Length Surveyed: 43.7	Downstream MH: 4801 B
Run Number:	Direction of Survey: Downstream
Height (Diameter): 48	Material: Reinforced Concrete Pipe

Percent Grade Mean: -0.96
 Plot Distance From: 0 To 45
 Max Percent Difference: 3
 Number of Window Values: 1
 Percent Difference Max for Windows Values: 60
 Number of Feet to Average: 1
 Final number of points plotted: 37

EP-4801 A-B





EP-4801 B-C

Project Information

Surveyor Name	GCS	Certificate Number	U-0917-07009391
Owner		Customer	
Drainage Area		PO Number	
Pipe Segment Reference		Date	10/6/2020 14:41
Street	LAWAND DR	City	COLUMBIA
Comments			

Manhole

Upstream MH	4801 B	Rim to Invert (U)	
Grade to Invert (U)		Rim to Grade (U)	
Downstream MH	4801 C	Rim to Invert (D)	
Grade to Invert (D)		Rim to Grade (D)	
Pipe Use	Stormwater Pipe	Direction of Survey	Downstream

Pipe

Height (Diameter)	48	Width	
Shape	Circular	Material	Reinforced Concrete Pipe
Lining Method		Pipe Joint Length	
Total Length	73.2	Length Surveyed	73.2
Year Constructed		Year Renewed	

Misc

Flow Control		Media Label	DVD
Purpose		Consequence of Failure	
Pre-Cleaning	No Pre-Cleaning	Date Cleaned	
Weather		Location Code	
Additional Info		Location Details	

Custom

Custom 1	Custom 2
Custom 3	Custom 4
Custom 5	Custom 6
Custom 7	Custom 8
Custom 9	Custom 10

Project			
Reverse Setup ID		Sheet (Group) Number	
Imperial Units (US)		Pressure Value	
Work Order		Project	
		CAROLINA CROSSROADS	

EP-4801 B-C

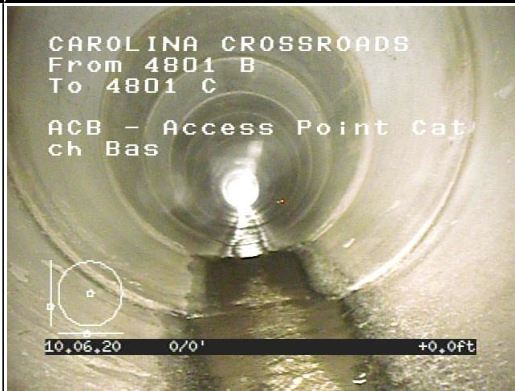
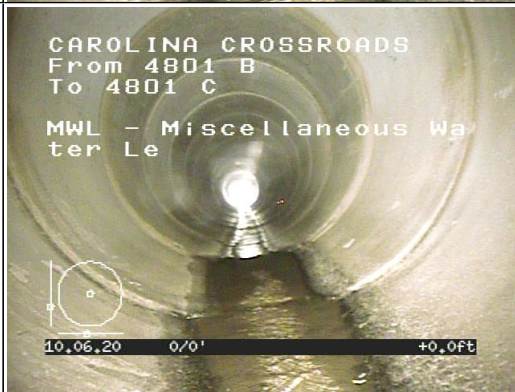
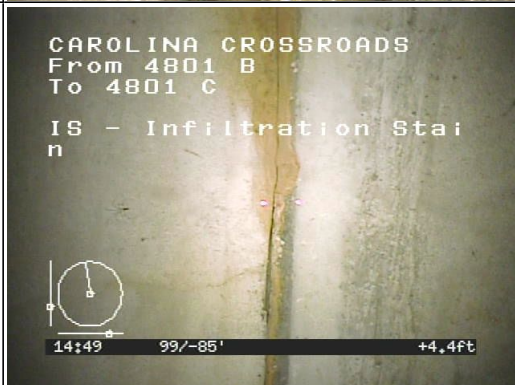
Coating Method		Completed	
		Yes	
Insp Tech Used			
CCTV	Yes	Laser	No
Sidewall	No	Sonar	No
Zoom	No	Other	No

Inspection	
Inspection Status	Complete Inspection
Reviewed By	Reviewer Certificate Number

Count Groups			
Taps	0	Roots	1
Cracks / Fractures	7	Broken / Holes / Collapse	0
Deposits	0	Obstruction	0
Abandoned Survey	0		

Project: CAROLINA CROSSROADS

Date: 10/6/2020 2:41:00 PM	Pipe Segment Reference:
Street: LAWAND DR	Upstream MH: 4801 B
Length Surveyed: 73.2	Downstream MH: 4801 C
Run Number:	Direction of Survey: Downstream
Height (Diameter): 48	Material: Reinforced Concrete Pipe

Distance	Fault Observation	Time	Picture
0.0	Access Point Catch Basin Severity: None Remarks: 4801 B	13	
0.0	Miscellaneous Water Level Severity: None Percent: 5	27	
4.4	Infiltration Stain Position: 9 To 3 Severity: None Joint Maint Weight: 1	01:27	

Distance	Fault Observation	Time	Picture
4.4	Crack Longitudinal Position: 12 Severity: None Joint Struct Weight: 2	01:49	<p>CAROLINA CROSSROADS From 4801 B To 4801 C</p> <p>CL - Crack Longitudinal</p> <p>14:49 92/-68' +4.4ft</p>
4.4	Miscellaneous General Observation Severity: None Remarks: GAP OBSERVATION 1.188	02:35	<p>CAROLINA CROSSROADS From 4801 B To 4801 C</p> <p>MGO - Miscellaneous General</p> <p>14:50 -133/-84' +4.4ft</p>
8.3	Crack Longitudinal Position: 1 Severity: None Cont Defect: S01 Joint Struct Weight: 2	03:42	<p>CAROLINA CROSSROADS From 4801 B To 4801 C</p> <p>CL - Crack Longitudinal</p> <p>14:51 63/-51' +8.3ft</p>

EP-4801 B-C

Distance	Fault Observation	Time	Picture
12.6	Crack Longitudinal Position: 2 Severity: None Joint Struct Weight: 2	05:02	<p>CAROLINA CROSSROADS From 4801 B To 4801 C</p> <p>CL - Crack Longitudinal</p> <p>10,06,20 42/-62' +12.5ft</p>
12.6	Infiltration Stain Position: 2 To 4 Severity: None Joint Maint Weight: 1	05:51	<p>CAROLINA CROSSROADS From 4801 B To 4801 C</p> <p>IS - Infiltration Stain</p> <p>10,06,20 33/-85' +12.6ft</p>
16.5	Crack Longitudinal Position: 1 Severity: None Cont Defect: F01 Joint Struct Weight: 2	06:46	<p>CAROLINA CROSSROADS From 4801 B To 4801 C</p> <p>CL - Crack Longitudinal</p> <p>10,06,20 94/-107' +16.4ft</p>

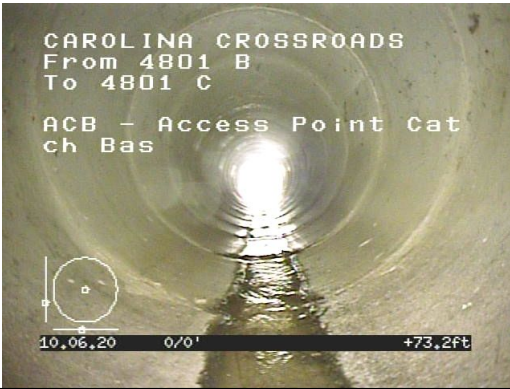
EP-4801 B-C

Distance	Fault Observation	Time	Picture
42.6	Crack Circumferential Position: 3 To 4 Severity: None Remarks: TWO SLIGHT CRACKS Struct Weight: 1	12:26	<p>CAROLINA CROSSROADS From 4801 B To 4801 C</p> <p>CC - Crack Circumferential</p> <p>10:06,20 -11/-94' +42.6ft</p>
48.9	Crack Longitudinal Position: 12 Severity: None Joint Struct Weight: 2	14:10	<p>CAROLINA CROSSROADS From 4801 B To 4801 C</p> <p>15:02 84/-112' +48.8ft</p>
53.0	Miscellaneous General Observation Severity: None Remarks: GAP OBSERVATION 1.268	15:18	<p>CAROLINA CROSSROADS From 4801 B To 4801 C</p> <p>MGO - Miscellaneous General</p> <p>15:03 136/-85' +52.9ft</p>

EP-4801 B-C

Distance	Fault Observation	Time	Picture
57.5	Crack Longitudinal Position: 10 Severity: None Joint Struct Weight: 2	16:40	
61.1	Infiltration Weeper Position: 4 Severity: None Joint Maint Weight: 2	18:35	
65.1	Roots Fine Joint Position: 5 Severity: None Joint Maint Weight: 1	19:54	

EP-4801 B-C

Distance	Fault Observation	Time	Picture
73.2	Access Point Catch Basin Severity: None Remarks: 4801 C	20:54	 <p>CAROLINA CROSSROADS From 4801 B To 4801 C</p> <p>ACB - Access Point Cat ch Bas</p> <p>10,06,20 0/0' +73,2ft</p>

Created with the  report generator

EP-4801 B-C

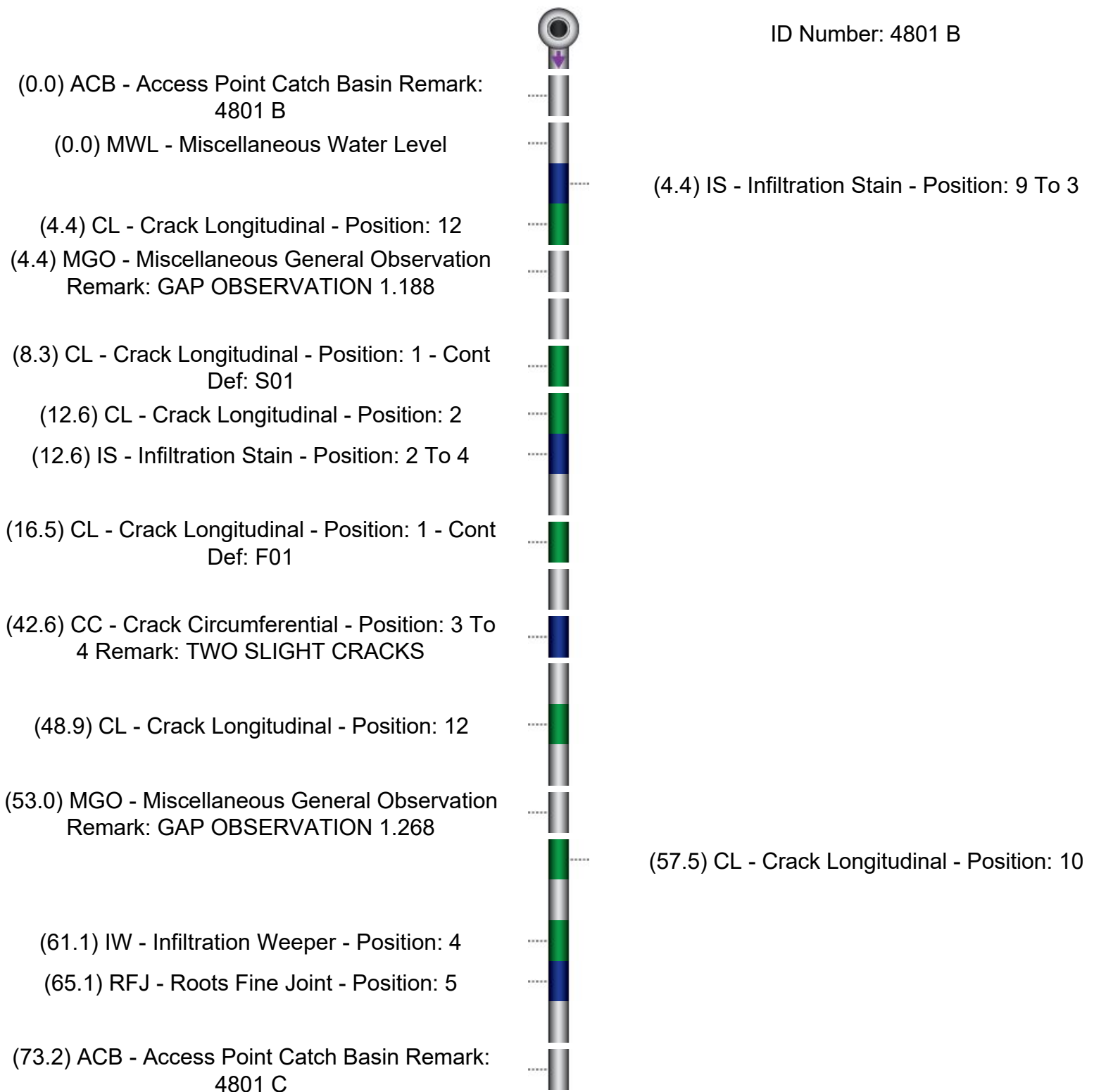


EP-4801 B-C

Project: CAROLINA CROSSROADS	
Date: 10/6/2020 2:41:00 PM	Pipe Segment Reference:
Street: LAWAND DR	Upstream MH: 4801 B
Length Surveyed: 73.2	Downstream MH: 4801 C
Run Number:	Direction of Survey: Downstream
Height (Diameter): 48	Material: Reinforced Concrete Pipe

Severity
Light-1
Moderate-2
Average-3
Heavy-4
Severe-5

ID Number: 4801 B





Created with the  report generator

EP-4801 B-C

Nassco C.C.T.V. Defect Code Information

Grade	Structural	O&M	Overall
5	0	0	0
4	0	0	0
3	0	0	0
2	12	2	14
1	1	3	4
Overall	13	5	18
Number of Defects	7	4	11
Pipe Rating	2611	2113	2714
Pipe Ratings Index	1.9	1.2	1.6

Nassco C.C.T.V. Defect Code Information

EP-4801 B-C

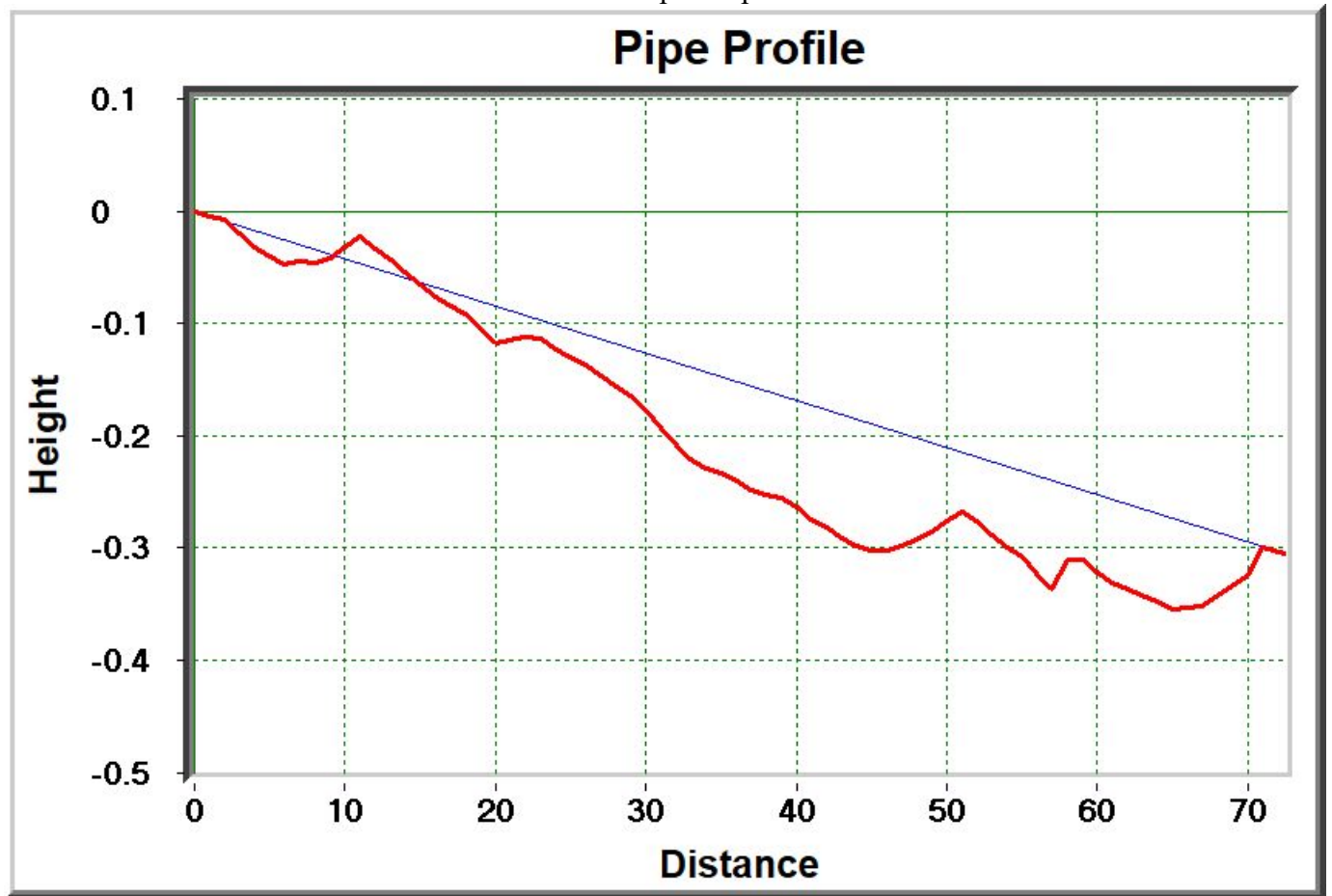
EP-4801 B-C

Distance	Video Ref	Code	Cont Defect	Value			Joint	Circumferential Location	
				Dimension		%		At / From	To
				1st	2nd				
0	13	ACB - Access Point Catch Basin							
		4801 B							
0	27	MWL - Miscellaneous Water Level				5			
4.4	87	IS - Infiltration Stain				X	9	3	
4.4	109	CL - Crack Longitudinal				X	12		
4.4	155	MGO - Miscellaneous General Observation							
		GAP OBSERVATION 1.188							
8.3	222	CL - Crack Longitudinal	S01				X	1	
12.6	302	CL - Crack Longitudinal					X	2	
12.6	351	IS - Infiltration Stain					X	2	4
16.5	406	CL - Crack Longitudinal	F01				X	1	
42.6	746	CC - Crack Circumferential						3	4
		TWO SLIGHT CRACKS							
48.9	850	CL - Crack Longitudinal				X	12		
53	918	MGO - Miscellaneous General Observation							
		GAP OBSERVATION 1.268							
57.5	1000	CL - Crack Longitudinal				X	10		
61.1	1115	IW - Infiltration Weeper							
65.1	1194	RFJ - Roots Fine Joint							
73.2	1254	ACB - Access Point Catch Basin							
		4801 C							

Project: CAROLINA CROSSROADS	
Date: 10/6/2020 2:41:00 PM	Pipe Segment Reference:
Street: LAWAND DR	Upstream MH: 4801 B
Length Surveyed: 73.2	Downstream MH: 4801 C
Run Number:	Direction of Survey: Downstream
Height (Diameter): 48	Material: Reinforced Concrete Pipe

Percent Grade Mean: -0.47
 Plot Distance From: 0 To 74
 Max Percent Difference: 3
 Number of Window Values: 1
 Percent Difference Max for Windows Values: 60
 Number of Feet to Average: 1
 Final number of points plotted: 69

EP-4801 B-C





EP-4801 C-D

Project Information

Surveyor Name	GCS	Certificate Number	U-0917-07009391
Owner		Customer	
Drainage Area		PO Number	
Pipe Segment Reference		Date	10/6/2020 15:07
Street	LAWAND DR	City	COLUMBIA
Comments			

Manhole

Upstream MH	4801 C	Rim to Invert (U)	
Grade to Invert (U)		Rim to Grade (U)	
Downstream MH	4801 D	Rim to Invert (D)	
Grade to Invert (D)		Rim to Grade (D)	
Pipe Use	Stormwater Pipe	Direction of Survey	Downstream

Pipe

Height (Diameter)	48	Width	
Shape	Circular	Material	Reinforced Concrete Pipe
Lining Method		Pipe Joint Length	
Total Length	61.9	Length Surveyed	61.9
Year Constructed		Year Renewed	

Misc

Flow Control		Media Label	DVD
Purpose		Consequence of Failure	
Pre-Cleaning	No Pre-Cleaning	Date Cleaned	
Weather		Location Code	
Additional Info		Location Details	

Custom

Custom 1	Custom 2
Custom 3	Custom 4
Custom 5	Custom 6
Custom 7	Custom 8
Custom 9	Custom 10

Project			
Reverse Setup ID		Sheet (Group) Number	
Imperial Units (US)		Pressure Value	
Work Order		Project	
		CAROLINA CROSSROADS	

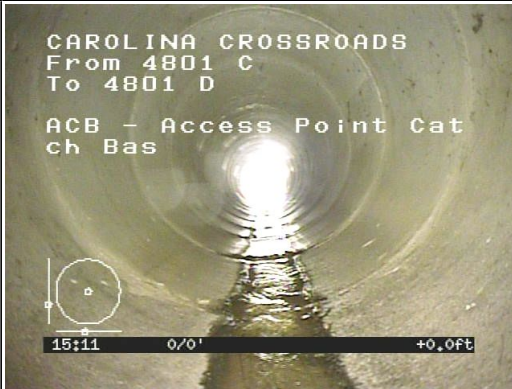
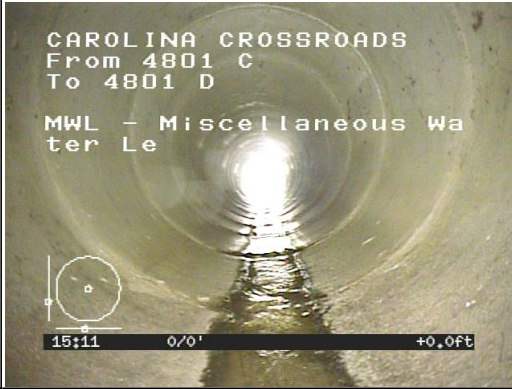
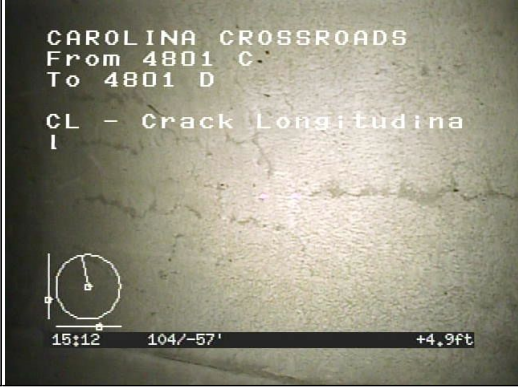
EP-4801 C-D

Coating Method		Completed	
		Yes	
Insp Tech Used			
CCTV	Yes	Laser	No
Sidewall	No	Sonar	No
Zoom	No	Other	No

Inspection	
Inspection Status	Complete Inspection
Reviewed By	Reviewer Certificate Number

Count Groups			
Taps	0	Roots	5
Cracks / Fractures	5	Broken / Holes / Collapse	0
Deposits	0	Obstruction	0
Abandoned Survey	0		

Project: CAROLINA CROSSROADS	
Date: 10/6/2020 3:07:00 PM	Pipe Segment Reference:
Street: LAWAND DR	Upstream MH: 4801 C
Length Surveyed: 61.9	Downstream MH: 4801 D
Run Number:	Direction of Survey: Downstream
Height (Diameter): 48	Material: Reinforced Concrete Pipe

Distance	Fault Observation	Time	Picture
0.0	Access Point Catch Basin Severity: None Remarks: 4801 C	16	
0.0	Miscellaneous Water Level Severity: None Percent: 5	31	
4.9	Crack Longitudinal Position: 12 Severity: None Joint Struct Weight: 2	01:06	

Distance	Fault Observation	Time	Picture
5.1	Roots Fine Joint Position: 6 Severity: None Joint Maint Weight: 1	01:34	
9.1	Crack Longitudinal Position: 12 Severity: None Joint Struct Weight: 2	02:34	
9.3	Roots Fine Joint Position: 7 Severity: None Joint Maint Weight: 1	02:56	

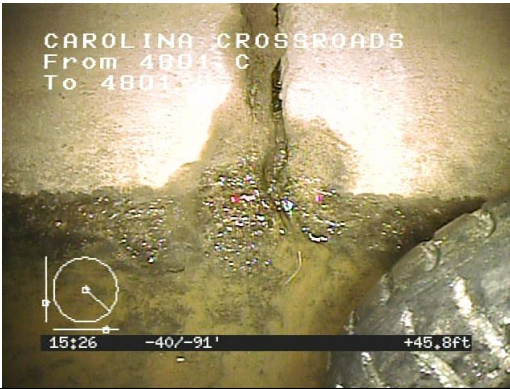
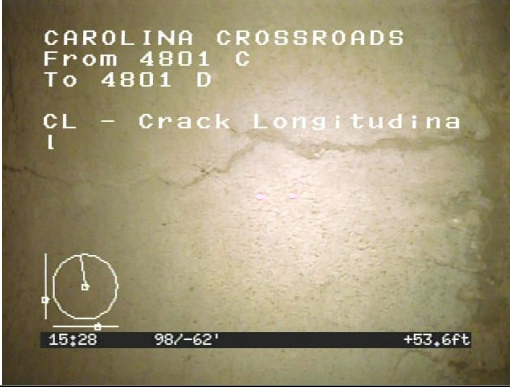
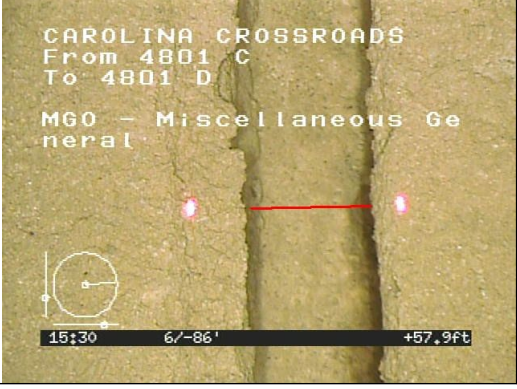
EP-4801 C-D

Distance	Fault Observation	Time	Picture
13.1	Roots Fine Joint Position: 5 Severity: None Joint Maint Weight: 1	4:10	
13.1	Miscellaneous General Observation Severity: None Remarks: GAP OBSERVATION 1.014	04:57	
37.2	Crack Longitudinal Position: 12 Severity: None Joint Struct Weight: 2	09:31	

EP-4801 C-D

Distance	Fault Observation	Time	Picture
41.6	Roots Fine Joint Position: 7 Severity: None Joint Maint Weight: 1	10:55	
45.6	Miscellaneous General Observation Severity: None Remarks: GAP OBSERVATION 1.811	12:07	
45.8	Crack Longitudinal Position: 12 Severity: None Struct Weight: 2	13:11	

EP-4801 C-D

Distance	Fault Observation	Time	Picture
45.8	Roots Fine Joint Position: 5 Severity: None Joint Maint Weight: 1	13:43	 <p>CAROLINA CROSSROADS From 4801 C To 4801 D</p> <p>CL - Crack Longitudinal</p> <p>15:26 -40/-91' +45.8ft</p>
53.6	Crack Longitudinal Position: 12 Severity: None Joint Struct Weight: 2	15:22	 <p>CAROLINA CROSSROADS From 4801 C To 4801 D</p> <p>CL - Crack Longitudinal</p> <p>15:28 98/-62' +53.6ft</p>
58.0	Miscellaneous General Observation Severity: None Remarks: GAP OBSERVATION 1.421	17:20	 <p>CAROLINA CROSSROADS From 4801 C To 4801 D</p> <p>MGO - Miscellaneous General</p> <p>15:30 6/-86' +57.9ft</p>

EP-4801 C-D

Distance	Fault Observation	Time	Picture
61.8	Miscellaneous General Observation Severity: None Remarks: GAP OBSERVATION 3.862	18:32	
61.9	Miscellaneous General Observation Severity: None Remarks: WATER PONDING AT END	19:28	
61.9	Access Point Discharge Point Severity: None Remarks: 4801 D	19:50	

Created with the  report generator

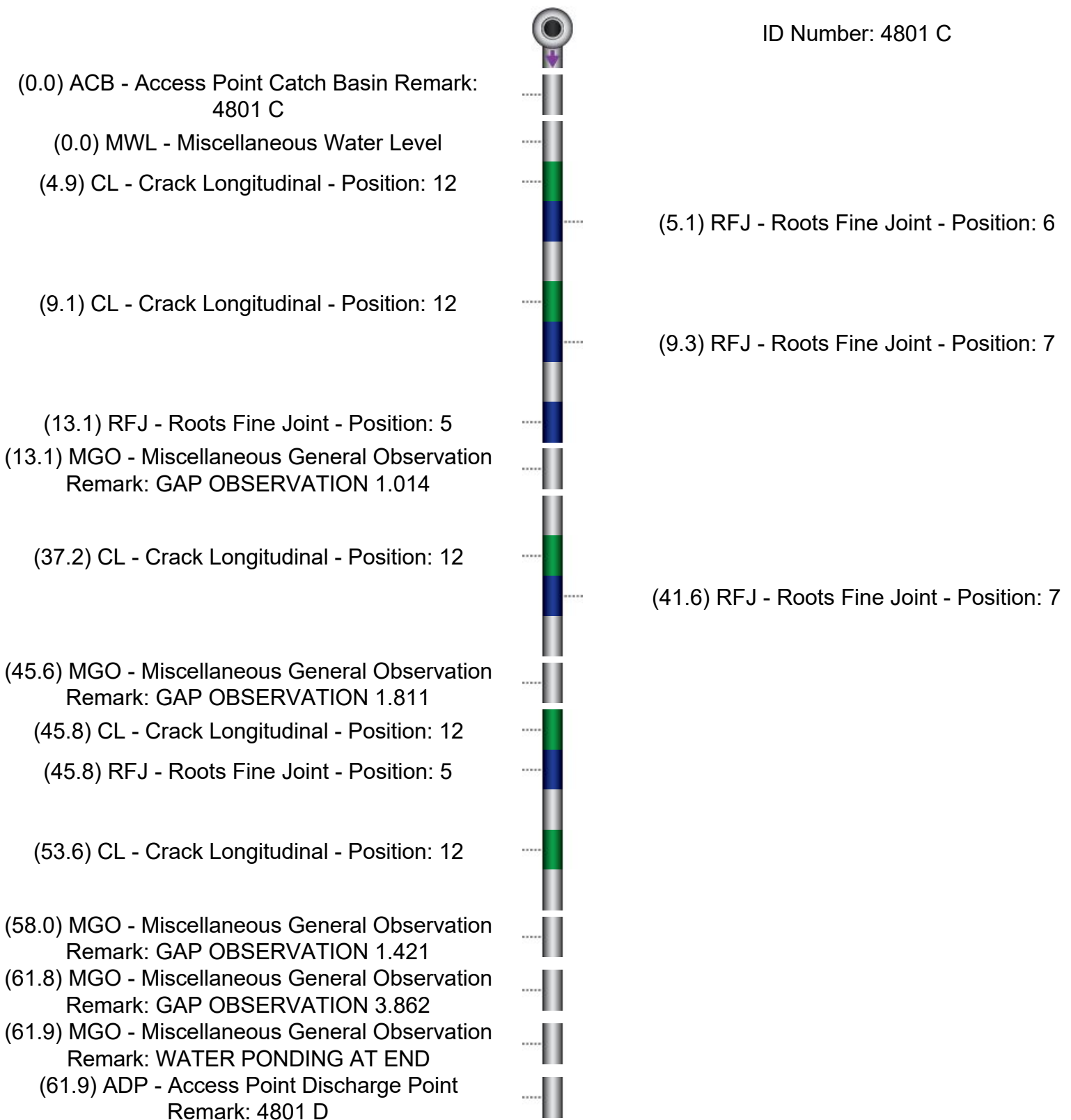
EP-4801 C-D



EP-4801 C-D

Project: CAROLINA CROSSROADS	
Date: 10/6/2020 3:07:00 PM	Pipe Segment Reference:
Street: LAWAND DR	Upstream MH: 4801 C
Length Surveyed: 61.9	Downstream MH: 4801 D
Run Number:	Direction of Survey: Downstream
Height (Diameter): 48	Material: Reinforced Concrete Pipe

Severity
Light-1
Moderate-2
Average-3
Heavy-4
Severe-5





Created with the  report generator

EP-4801 C-D

Nassco C.C.T.V. Defect Code Information

Grade	Structural	O&M	Overall
5	0	0	0
4	0	0	0
3	0	0	0
2	10	0	10
1	0	5	5
Overall	10	5	15
Number of Defects	5	5	10
Pipe Rating	2500	1500	2515
Pipe Ratings Index	2	1	1.5

Nassco C.C.T.V. Defect Code Information

EP-4801 C-D

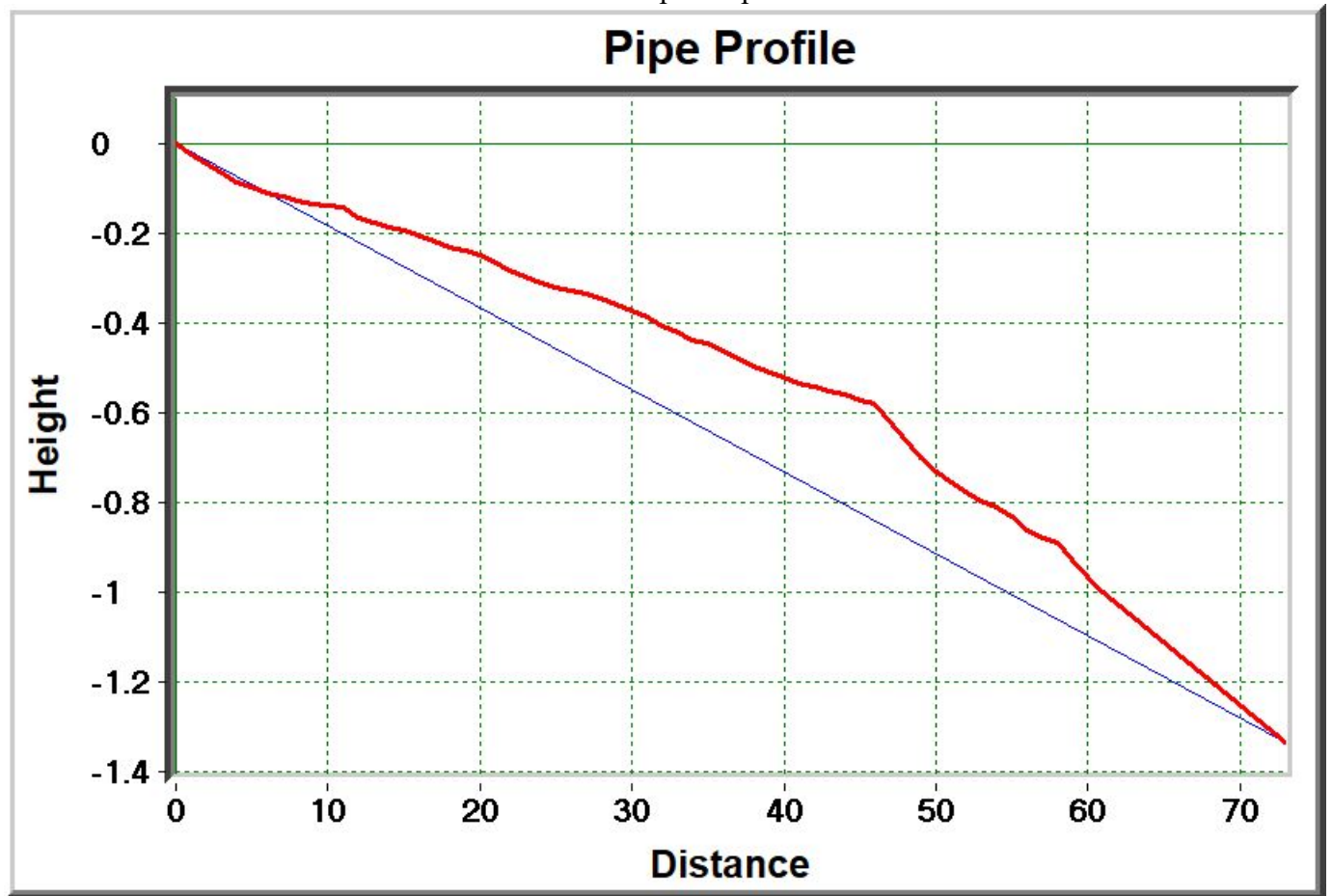
EP-4801 C-D

Distance	Video Ref	Code	Cont Defect	Value			Joint	Circumferential Location	
				Dimension		%		At / From	To
				1st	2nd				
0	16	ACB - Access Point Catch Basin							
		4801 C							
0	31	MWL - Miscellaneous Water Level				5			
4.9	66	CL - Crack Longitudinal					X	12	
5.1	94	RFJ - Roots Fine Joint					X	6	
9.1	154	CL - Crack Longitudinal					X	12	
9.3	176	RFJ - Roots Fine Joint					X	7	
13.1	250	RFJ - Roots Fine Joint					X	5	
13.1	297	MGO - Miscellaneous General Observation							
		GAP OBSERVATION 1.014							
37.2	571	CL - Crack Longitudinal					X	12	
41.6	655	RFJ - Roots Fine Joint					X	7	
45.6	727	MGO - Miscellaneous General Observation							
		GAP OBSERVATION 1.811							
45.8	791	CL - Crack Longitudinal						12	
45.8	823	RFJ - Roots Fine Joint					X	5	
53.6	922	CL - Crack Longitudinal					X	12	
58	1040	MGO - Miscellaneous General Observation							
		GAP OBSERVATION 1.421							
61.8	1112	MGO - Miscellaneous General Observation							
		GAP OBSERVATION 3.862							
61.9	1168	MGO - Miscellaneous General Observation							
		WATER PONDING AT END							
61.9	1190	ADP - Access Point Discharge Point							
		4801 D							

Project: CAROLINA CROSSROADS	
Date: 10/6/2020 3:07:00 PM	Pipe Segment Reference:
Street: LAWAND DR	Upstream MH: 4801 C
Length Surveyed: 61.9	Downstream MH: 4801 D
Run Number:	Direction of Survey: Downstream
Height (Diameter): 48	Material: Reinforced Concrete Pipe

Percent Grade Mean: -1.61
 Plot Distance From: 0 To 63
 Max Percent Difference: 3
 Number of Window Values: 1
 Percent Difference Max for Windows Values: 60
 Number of Feet to Average: 1
 Final number of points plotted: 55

EP-4801 C-D



I-20/26/126 Corridor Improvement Project

EP-4802

Station 113+07

36-inch RCP

Client: SCDOT

Mead & Hunt Project Number: 114295.02

Phase: Drainage

Video Pipe Inspections

Summary:

Mead & Hunt, Inc. assessed the overall condition of a 36-inch reinforced concrete pipe as illustrated on sheet number 24 of the provided plan sheets for I-126.

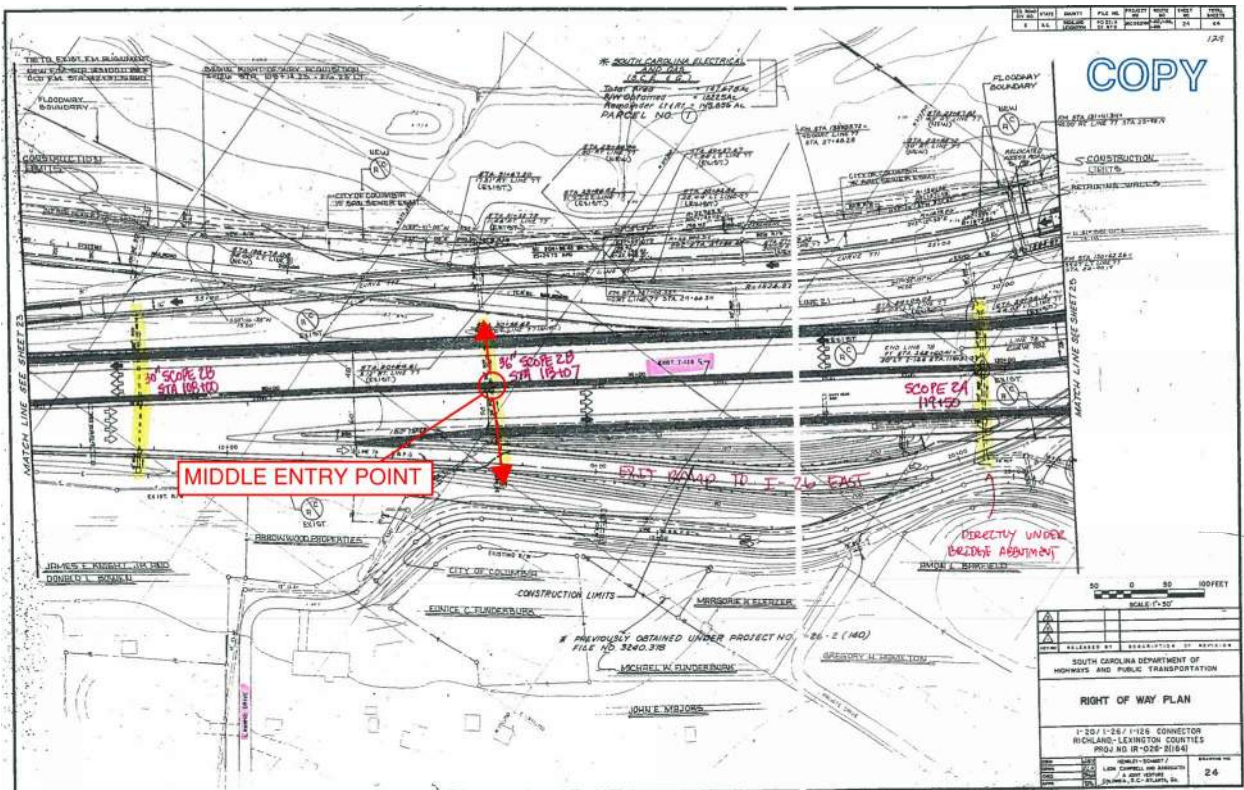
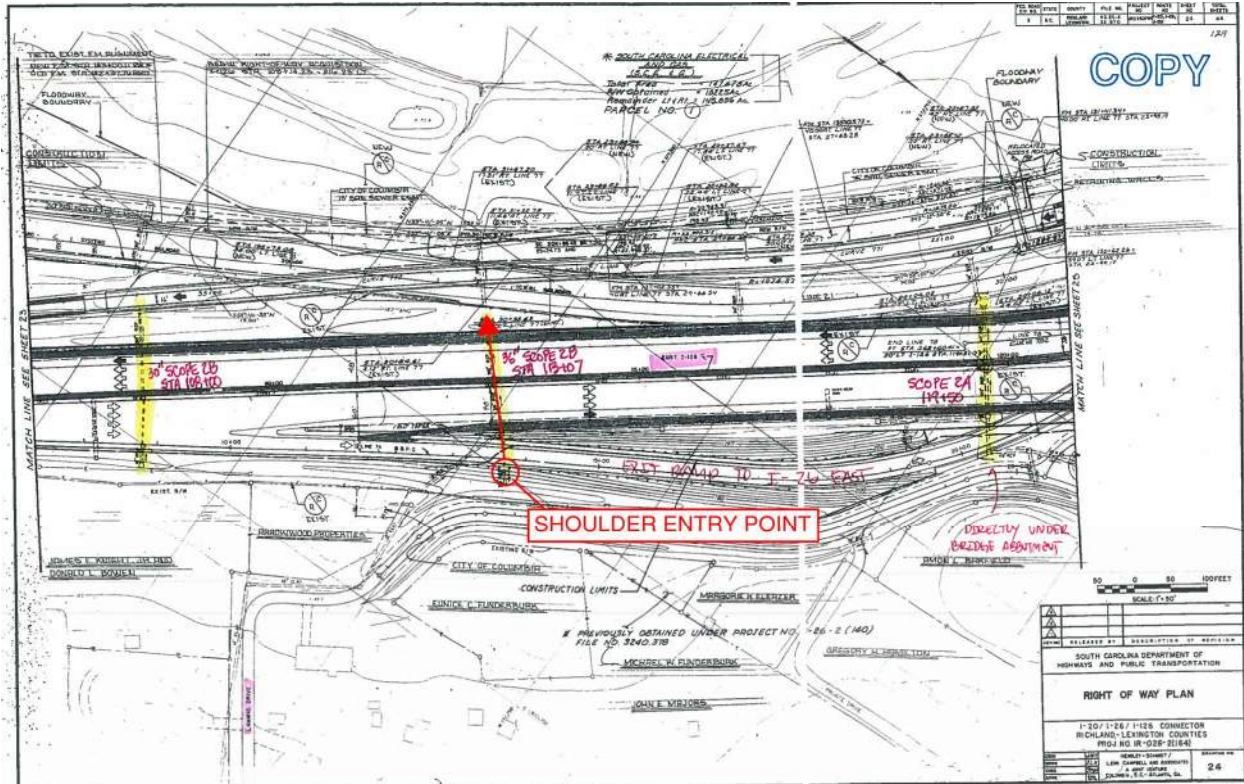
Objective:

The inspections are to assess the overall condition of each box culvert. Each culverts dimension will be measured for comparison to the current plans. Deficiencies to be noted include cracks, spalling, cave-ins, debris build-up, sediment build-up, etc. Each box culvert is to be recorded on video, from end to end, to display any deficiencies within the culvert.

I-126 Station 113+07

- Dimensions: Verified 36-inch RCP, Approximately 220 LF
- Observations
 1. Joint at approximately 10-feet (North of shoulder entry)-crack on side
 2. Joint at approximately 68-feet (North of shoulder entry)-chipped joint with some water seeping through
 3. Joint at approximately 48-feet (North of shoulder entry)-separated joint
 4. Joint at approximately 118-feet (South of middle entry)-severe separation, water has begun to undermine pipe.
- Recommendations
 1. Slipline or replace existing pipe.
 2. Determine if new backfill is needed under pipe where water is exiting through joint.

EP-4802



EP-4802

1.



2.



EP-4802

3.



4.

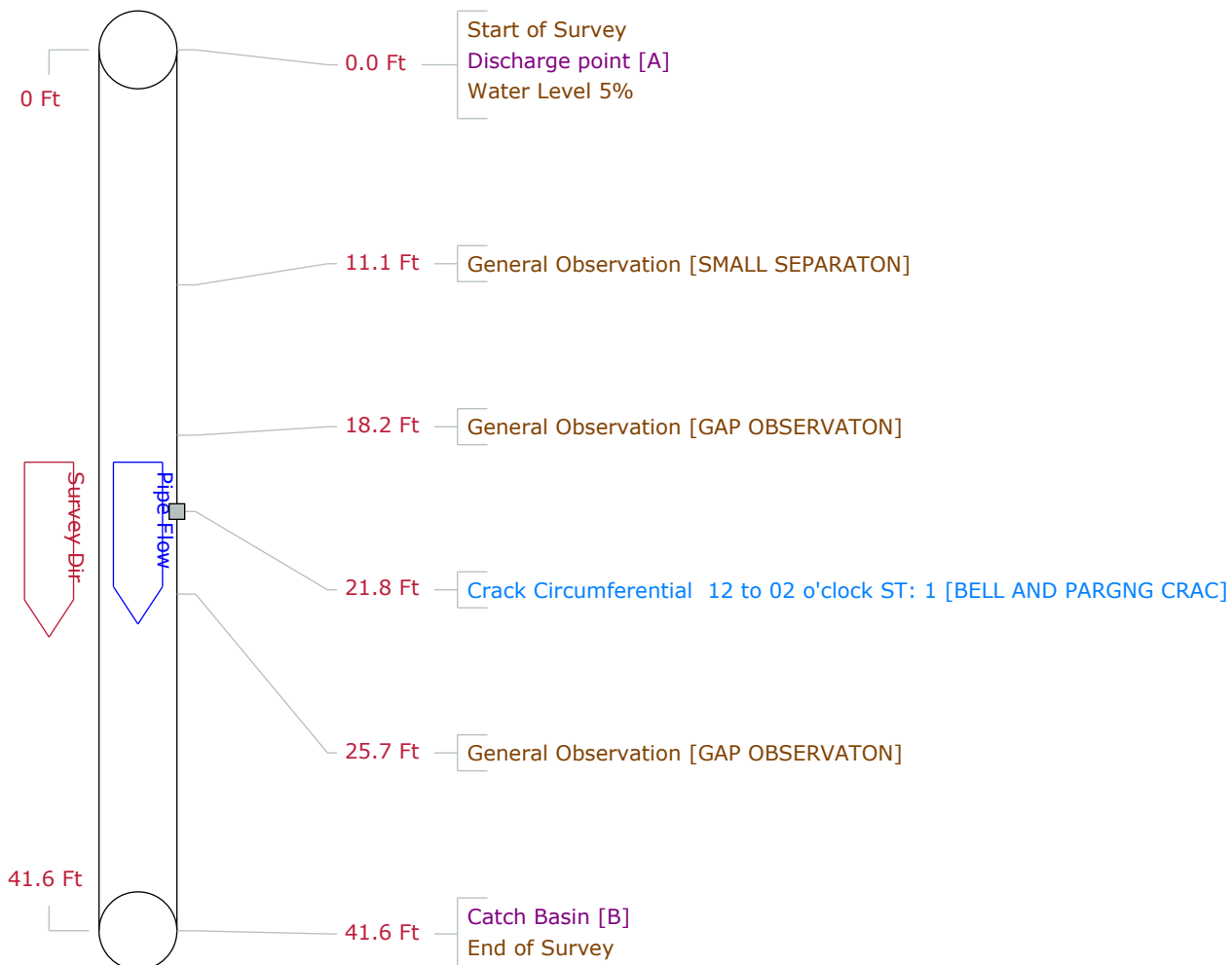


Pipe Graphic Report of PSR 4803 A

for HDR

EP-4803 A-B

Setup	1	Surveyor	GCS	Certificate #	U-0917-07009391	System Owner	SCDOT
Drainage	Survey Customer						
P/O #		Date	2020/11/05	Time	13:40	Street	FRONTAGE
City	WEST COLUMBIA	Further location details					
Up	4803 A	Rim to invert		Grade to invert		Rim to grade	Ft
Down	4803 B	Rim to invert		Grade to invert		Rim to grade	Ft
Use		Direction	Downstream	Flow control		Media No	
Shape	Circular	Height	24	Width	ins	Preclean Z	Date Cleaned
Material	Reinforced Concrete Pipe	Joint length	Ft	Total length	41.6	Ft	Length Surveyed 41.60
Lining		Year laid		Year rehabilitated		Weather	
Purpose	Cat						
Additional info	OFF I-126	<div>Structural</div> <div>Miscellaneous</div>					<div>O & M</div> <div>Hydraulic</div>
Location							
Project	Carolina Crossroads	Work Order					
Northing		Easting		Elevation			
Coordinate System		GPS Accuracy					



SCA Underground

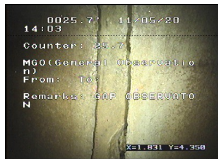
Phone: (803) 730-3568

Address: PO box Suite 102, West Columbia, SC

Work Order	Setup 1		
Video	Survey Date	2020/11/05	
Path to picture files	E:\CAMERA WORK DATABASE\Snaps\CAROLNA CROSSROADS\		
Path to video files	E:\CAMERA WORK DATABASE\Movies\CAROLNA CROSSROADS\		
Path to media files	E:\CAMERA WORK DATABASE\Media\CAROLNA CROSSROADS\		



Video Index **Count** 11.1 Ft
Code General Observation
Remarks SMALL SEPARATON
File Name 2.jpg



Video Index **Count** 25.7 Ft
Code General Observation
Remarks GAP OBSERVATON
File Name 3.jpg



Tabular Report of PSR 4803 A

for HDR

Setup	1	Surveyor	GCS	Certificate #	U-0917-07009391	System Owner	SCDOT
Drainage		Survey Customer					
P/O #		Date	2020/11/05	Time	13:40	Street	FRONTAGE
City	WEST COLUMBIA	Further location details					
Up	4803 A	Rim to invert		Grade to invert		Rim to grade	Ft
Down	4803 B	Rim to invert		Grade to invert		Rim to grade	Ft
Use		Direction	Down	Flow control		Media No	
Shape	Circular	Height	24	Width	ins	Preclean Z	Date Cleaned
Material	Reinforced Concrete Pipe	Joint length		Ft	Total length	41.6	Ft
Lining		Year laid		Year rehabilitated		Weather	
Purpose		Cat				Pressure	
Additional info	OFF I-126					Structural	O & M
Location						Miscellaneous	Constructional
Project	Carolina Crossroads					Work Order	
Northing		Easting				Elevation	
Coordinate System						GPS Accuracy	

Count	Video	CD	Code	In1	In2	%	JntFr	To	ImRef	Remarks
0.0			ST							Start of Survey
0.0			ADP							Discharge point
0.0			MWL			5				Water Level
11.1			MGO							General Observation
18.2			MGO							General Observation
21.8			CC				J	12	02	Crack Circumferential
25.7			MGO							General Observation
41.6			ACB							Catch Basin
41.6			FH							End of Survey

41.6 Ft Total Length Surveyed

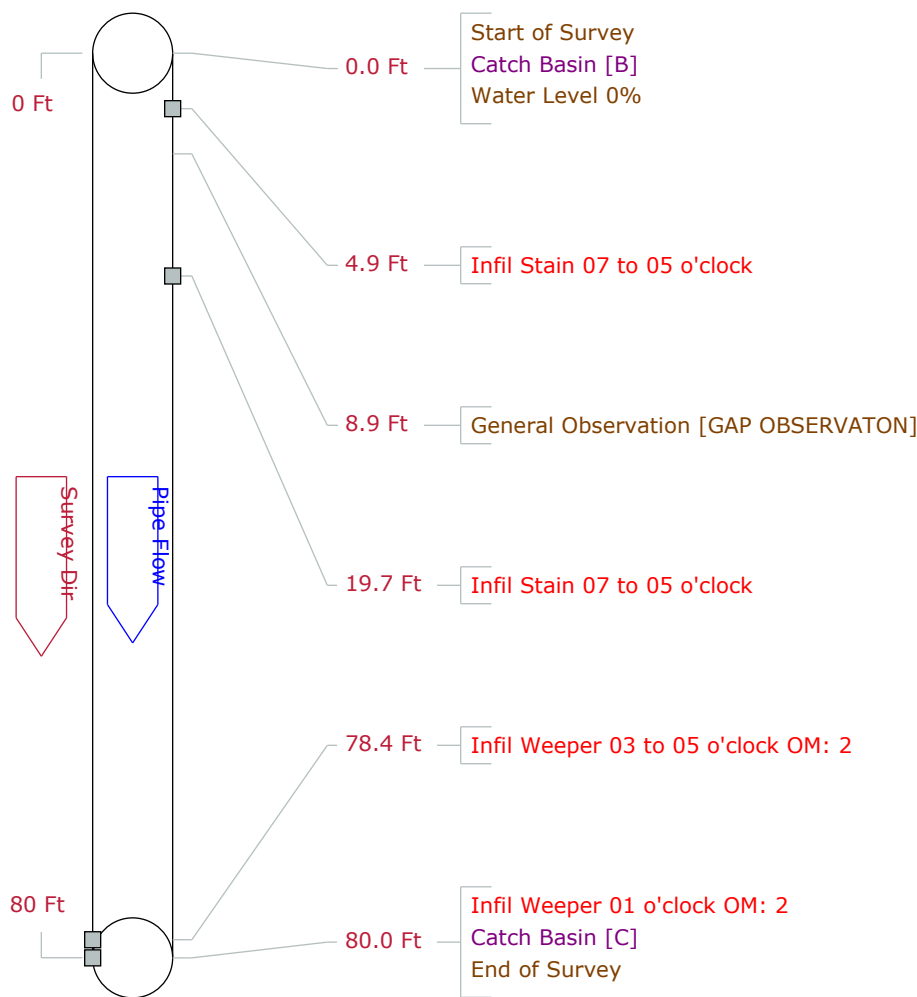
Scores	Structural:	Pipe Rating	1	Pipe Ratings Index	1	Quick Rating	1100
	O&M:	Pipe Rating	0	Pipe Ratings Index	0	Quick Rating	0000
	Overall	Pipe Rating	1	Pipe Ratings Index	1	Quick Rating	1100



SCA Underground
Phone:(803)730-3568

Pipe Graphic Report of PSR 4803 B for HDR

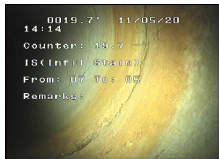
Setup	2	Surveyor	GCS	Certificate #	U-0917-07009391	System Owner	SCDOT			
Drainage	Survey Customer									
P/O #	Date 2020/11/05		Time 14:07		Street FRONTAGE					
City	WEST COLUMBIA		Further location details							
Up	4803 B		Rim to invert		Grade to invert		Rim to grade	Ft		
Down	4803 C		Rim to invert		Grade to invert		Rim to grade	Ft		
Use			Direction	Downstream	Flow control		Media No			
Shape	Circular		Height	24	Width	ins	Preclean	Z	Date Cleaned	
Material	Reinforced Concrete Pipe		Joint length	Ft	Total length	80.0	Ft	Length Surveyed	80.00	Ft
Lining			Year laid	Year rehabilitated		Weather				
Purpose			Cat							
Additional info	OFF I-126					Structural	O & M	Constructional		
Location						Miscellaneous	Hydraulic			
Project	Carolina Crossroads					Work Order				
Northing			Easting			Elevation				
Coordinate System						GPS Accuracy				



Work Order	Setup 2		
Video	Survey Date	2020/11/05	
Path to picture files	E:\CAMERA WORK DATABASE\Snapshots\CAROLNA CROSSROADS\		
Path to video files	E:\CAMERA WORK DATABASE\Movies\CAROLNA CROSSROADS\		
Path to media files	E:\CAMERA WORK DATABASE\Media\CAROLNA CROSSROADS\		



Video Index **Count** 4.9 Ft
Code Infil Stain
Remarks
File Name 5.jpg



Video Index **Count** 19.7 Ft
Code Infil Stain
Remarks
File Name 6.jpg



Video Index **Count** 78.4 Ft
Code Infil Weeper
Remarks
File Name 7.jpg



Video Index **Count** 80.0 Ft
Code Infil Weeper
Remarks
File Name 8.jpg



Tabular Report of PSR 4803 B

for HDR

Setup	2	Surveyor	GCS	Certificate #	U-0917-07009391	System Owner	SCDOT
Drainage		Survey Customer					
P/O #		Date	2020/11/05	Time	14:07	Street	FRONTAGE
City	WEST COLUMBIA	Further location details					
Up	4803 B	Rim to invert		Grade to invert		Rim to grade	Ft
Down	4803 C	Rim to invert		Grade to invert		Rim to grade	Ft
Use		Direction	Down	Flow control		Media No	
Shape	Circular	Height	24	Width	ins	Preclean Z	Date Cleaned
Material	Reinforced Concrete Pipe	Joint length		Ft	Total length	80.0	Ft
Lining		Year laid		Year rehabilitated		Weather	
Purpose		Cat				Pressure	
Additional info	OFF I-126					Structural	O & M
Location						Miscellaneous	Constructional
Project	Carolina Crossroads					Work Order	
Northing		Easting				Elevation	
Coordinate System						GPS Accuracy	

Count	Video	CD	Code	In1	In2	%	JntFr	To	ImRef	Remarks
0.0			ST Start of Survey							
0.0			ACB Catch Basin							B
0.0			MWL Water Level			0				
4.9			IS Infil Stain				J	07	05	
8.9			MGO General Observation							GAP OBSERVATON
19.7			IS Infil Stain				J	07	05	
78.4			IW Infil Weeper				J	03	05	
80.0			IW Infil Weeper					01		
80.0			ACB Catch Basin							C
80.0			FH End of Survey							

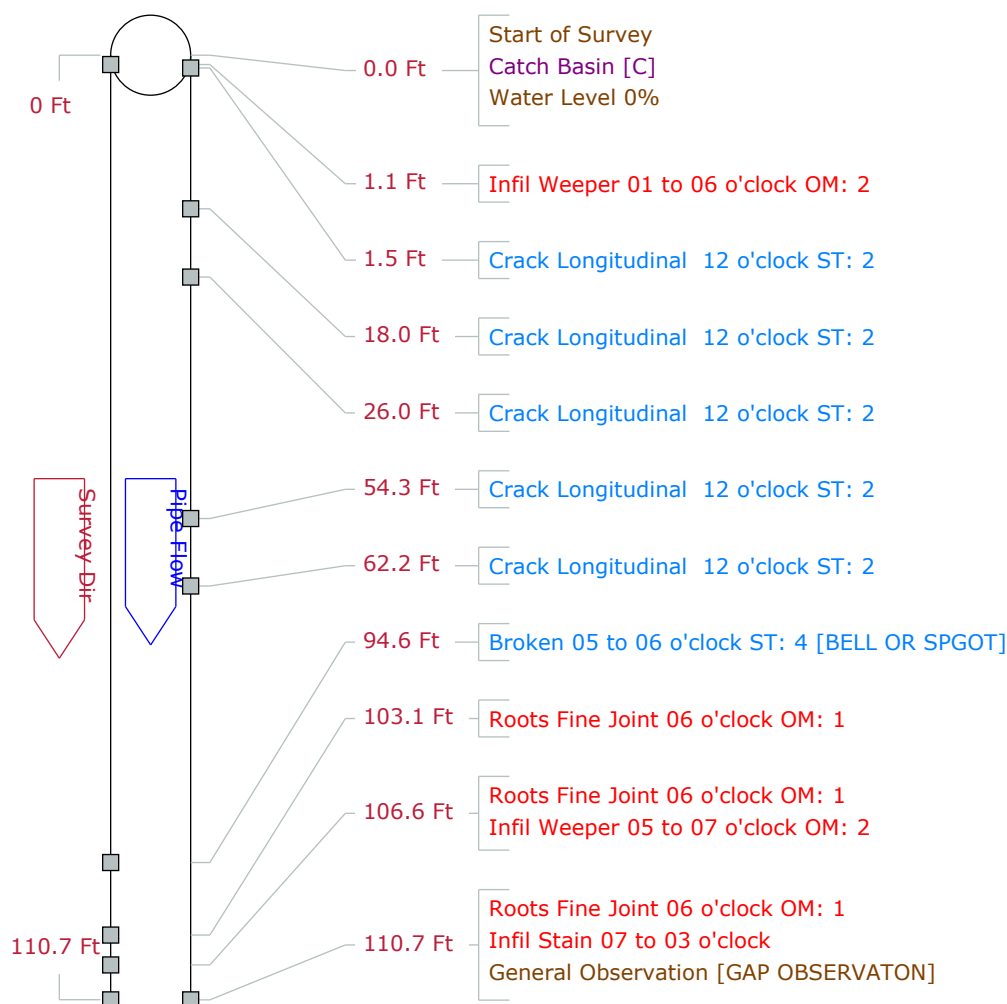
80.0 Ft Total Length Surveyed

Scores	Structural:	Pipe Rating	0	Pipe Ratings Index	0	Quick Rating	0000
	O&M:	Pipe Rating	4	Pipe Ratings Index	0.7	Quick Rating	2200
	Overall	Pipe Rating	4	Pipe Ratings Index	0.7	Quick Rating	2200

Pipe Graphic Report of PSR 4803 C

for HDR

Setup	3	Surveyor	GCS	Certificate #	U-0917-07009391	System Owner	SCDOT	
Drainage	Survey Customer							
P/O #		Date	2020/11/05	Time	14:29	Street	FRONTAGE	
City	WEST COLUMBIA	Further location details						
Up	4803 C	Rim to invert		Grade to invert		Rim to grade	Ft	
Down	4803 D	Rim to invert		Grade to invert		Rim to grade	Ft	
Use		Direction	Downstream	Flow control		Media No		
Shape	Circular	Height	24	Width	ins	Preclean Z	Date Cleaned	
Material	Reinforced Concrete Pipe	Joint length		Ft	Total length	114.8 Ft	Length Surveyed 114.80 Ft	
Lining		Year laid		Year rehabilitated		Weather		
Purpose		Cat						
Additional info	OFF I-126					Structural	O & M	Constructional
Location						Miscellaneous	Hydraulic	
Project	Carolina Crossroads	Work Order						
Northing		Easting			Elevation			
Coordinate System		GPS Accuracy						



SCA Underground

Phone:(803)730-3568

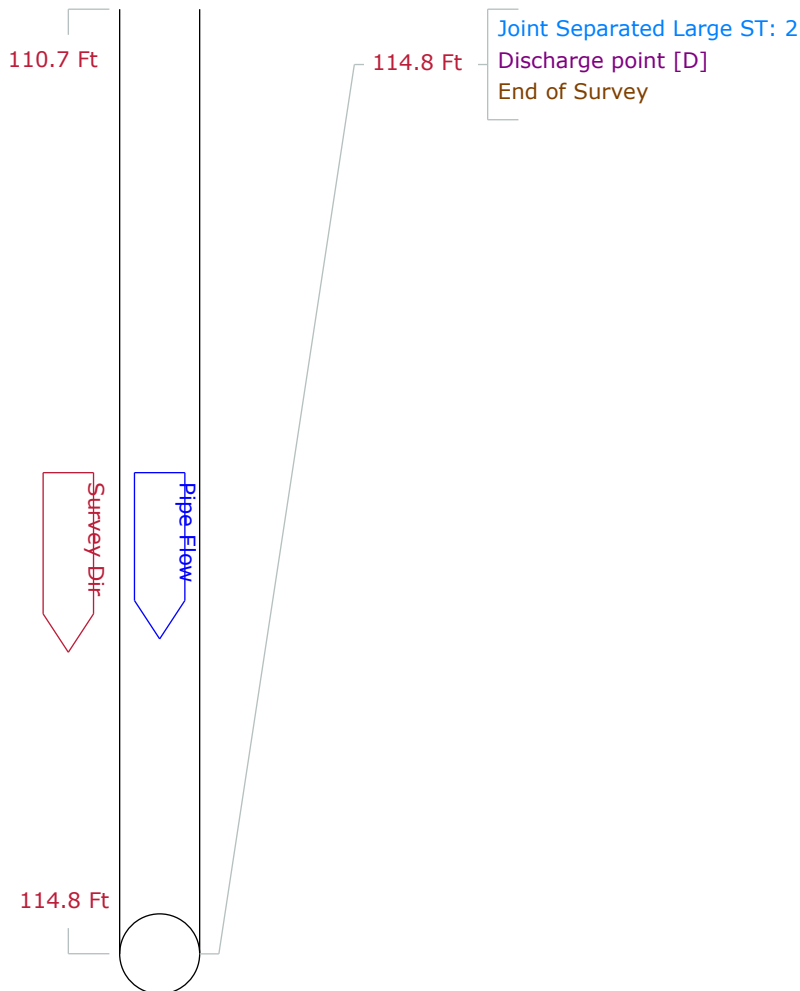
Address: PO box Suite 102, West Columbia, SC

Pipe Graphic Report of PSR 4803 C

for HDR

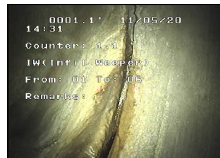
EP-4803 C-D

Setup 3	Surveyor GCS	Certificate # U-0917-07009391	System Owner SCDOT
Drainage		Survey Customer	
P/O #	Date 2020/11/05	Time 14:29	Street FRONTAGE
City WEST COLUMBIA	Further location details		
Up 4803 C	Rim to invert	Grade to invert	Rim to grade Ft
Down 4803 D	Rim to invert	Grade to invert	Rim to grade Ft
Use	Direction Downstream	Flow control	Media No
Shape Circular	Height 24 Width	ins Preclean Z	Date Cleaned
Material Reinforced Concrete Pipe	Joint length Ft	Total length 114.8 Ft	Length Surveyed 114.80 Ft
Lining	Year laid	Year rehabilitated	Weather
Purpose	Cat		
Additional info OFF I-126	<div> Structural O & M Constructional </div> <div> Miscellaneous Hydraulic </div>		
Location	Work Order		
Project Carolina Crossroads	Elevation		
Northing	Easting	GPS Accuracy	
Coordinate System			

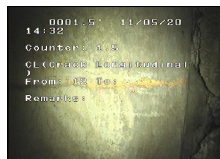


SCA Underground
 Phone: (803) 730-3568
 Address: PO box Suite 102, West Columbia, SC

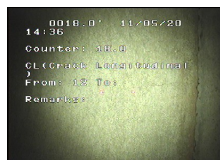
Work Order	Setup 3		
Video	Survey Date	2020/11/05	
Path to picture files	E:\CAMERA WORK DATABASE\Snaps\CAROLNA CROSSROADS\		
Path to video files	E:\CAMERA WORK DATABASE\Movies\CAROLNA CROSSROADS\		
Path to media files	E:\CAMERA WORK DATABASE\Media\CAROLNA CROSSROADS\		



Video Index **Count** 1.1 Ft
Code Infil Weeper
Remarks
File Name 10.jpg



Video Index **Count** 1.5 Ft
Code Crack Longitudinal
Remarks
File Name 11.jpg



Video Index **Count** 18.0 Ft
Code Crack Longitudinal
Remarks
File Name 12.jpg



Video Index **Count** 26.0 Ft
Code Crack Longitudinal
Remarks
File Name 13.jpg



Video Index **Count** 54.3 Ft
Code Crack Longitudinal
Remarks
File Name 14.jpg



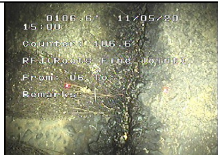
Video Index **Count** 62.2 Ft
Code Crack Longitudinal
Remarks
File Name 15.jpg



Video Index **Count** 103.1 Ft
Code Roots Fine Joint
Remarks
File Name 16.jpg



CCTV Picture List of 4803 C for HDR

Work Order		Setup 3
Video	Survey Date	2020/11/05
Path to picture files	E:\CAMERA WORK DATABASE\Snapshots\CAROLNA CROSSROADS\	
Path to video files	E:\CAMERA WORK DATABASE\Movies\CAROLNA CROSSROADS\	
Path to media files	E:\CAMERA WORK DATABASE\Media\CAROLNA CROSSROADS\	
	Video Index	Count 106.6 Ft
	Code	Roots Fine Joint
	Remarks	
	File Name	17.jpg



CCTV Picture List of

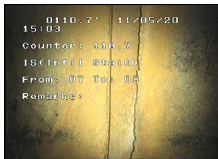
4803 C

for HDR

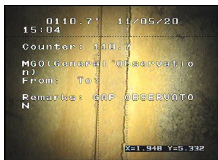
Work Order			Setup 3
Video	Survey Date	2020/11/05	
Path to picture files	E:\CAMERA WORK DATABASE\Snaps\CAROLNA CROSSROADS\		
Path to video files	E:\CAMERA WORK DATABASE\Movies\CAROLNA CROSSROADS\		
Path to media files	E:\CAMERA WORK DATABASE\Media\CAROLNA CROSSROADS\		



Video Index Count 110.7 Ft
Code Roots Fine Joint
Remarks
File Name 18.jpg



Video Index Count 110.7 Ft
Code Infil Stain
Remarks
File Name 19.jpg



Video Index Count 110.7 Ft
Code General Observation
Remarks GAP OBSERVATON
File Name 20.jpg



PiPELOGIX

SCA Underground

Phone: (803)730-3568

Address: PO box Suite 102, West Columbia, SC

Tabular Report of PSR 4803 C

for HDR

Setup	3	Surveyor	GCS	Certificate #	U-0917-07009391	System Owner	SCDOT
Drainage		Survey Customer					
P/O #		Date	2020/11/05	Time	14:29	Street	FRONTAGE
City	WEST COLUMBIA	Further location details					
Up	4803 C	Rim to invert		Grade to invert		Rim to grade	Ft
Down	4803 D	Rim to invert		Grade to invert		Rim to grade	Ft
Use		Direction	Down	Flow control		Media No	
Shape	Circular	Height	24	Width	ins	Preclean Z	Date Cleaned
Material	Reinforced Concrete Pipe	Joint length		Ft	Total length	114.8 Ft	Length Surveyed
Lining		Year laid		Year rehabilitated		Weather	
Purpose		Cat				Pressure	
Additional info	OFF I-126					Structural	O & M
Location						Miscellaneous	Constructional
Project	Carolina Crossroads					Work Order	
Northing		Easting				Elevation	
Coordinate System						GPS Accuracy	

Count	Video	CD	Code	In1	In2	%	JntFr	To	ImRef	Remarks
0.0			ST Start of Survey							
0.0			ACB Catch Basin							C
0.0			MWL Water Level			0				
1.1			IW Infil Weeper				J	01	06	
1.5			CL Crack Longitudinal				J	12		
18.0			CL Crack Longitudinal				J	12		
26.0			CL Crack Longitudinal				J	12		
54.3			CL Crack Longitudinal				J	12		
62.2			CL Crack Longitudinal				J	12		
94.6			B Broken				J	05	06	BELL OR SPGOT
103.1			RFJ Roots Fine Joint				J	06		
106.6			RFJ Roots Fine Joint				J	06		
106.6			IW Infil Weeper				J	05	07	
110.7			RFJ Roots Fine Joint				J	06		
110.7			IS Infil Stain				J	07	03	
110.7			MGO General Observation							GAP OBSERVATON
114.8			JSL Joint Separated Large							
114.8			ADP Discharge point							D
114.8			FH End of Survey							

114.8 Ft Total Length Surveyed

Scores	Structural:	Pipe Rating	16	Pipe Ratings Index	2.3	Quick Rating	4126
	O&M:	Pipe Rating	7	Pipe Ratings Index	1	Quick Rating	2213
	Overall	Pipe Rating	23	Pipe Ratings Index	3.3	Quick Rating	4128



SCA Underground
Phone:(803)730-3568

I-20/26/126 Corridor Improvement Project

EC-4901

Station 104+50

5' X 5' RCB

Client: SCDOT

Mead & Hunt Project Number: 114295.02

Phase: Drainage

Summary:

Mead & Hunt, Inc. assessed the overall condition of a 5-foot by 5-foot RCB as illustrated on sheet number 23 of the provided plan sheets for I-26.

Objective:

The inspections are to assess the overall condition of each box culvert. Each culverts dimension will be measured for comparison to the current plans. Deficiencies to be noted include cracks, spalling, cave-ins, debris build-up, sediment build-up, etc. Each box culvert is to be recorded on video, from end to end, to display any deficiencies within the culvert.

I-126 Station 104+50

- Dimensions: Verified 5-foot by 5-foot RCB, Approximately 128 LF
- Observations
 1. Approximately 10-feet (North of entry)-36-inch RCP in wall.
 2. At about midway point of the culvert-18-inch RCP in wall.
- Recommendations
 1. None

The image displays two sheets of an engineering plan view for a proposed road project. The left sheet, labeled 'SCOPE 2B', shows a section of the road with a 'CONSTRUCTION LIMITS' line and a 'COAST ON ONE BANK' note. The right sheet, labeled 'SCOPE 2A', shows another section of the road with a 'CONSTRUCTION LIMITS' line and a 'ENTRY POINT' label. A red arrow points from the 'ENTRY POINT' label to a specific location on the right sheet. The drawing includes various annotations such as 'NO RIGHT-OF-WAY REQUIRED ON THIS DRAWING' and 'COPY'. A title block is visible in the bottom right corner.



EP-4902 A-B

Project Information

Surveyor Name	GCS	Certificate Number	U-0917-07009391
Owner		Customer	
Drainage Area		PO Number	
Pipe Segment Reference	PIPE 4902	Date	10/13/2020 14:53
Street	ARROWWOOD	City	COLUMBIA
Comments			

Manhole

Upstream MH	4902 A	Rim to Invert (U)	
Grade to Invert (U)		Rim to Grade (U)	
Downstream MH	4902 B	Rim to Invert (D)	
Grade to Invert (D)		Rim to Grade (D)	
Pipe Use	Stormwater Pipe	Direction of Survey	Upstream

Pipe

Height (Diameter)	30	Width	
Shape	Circular	Material	Reinforced Concrete Pipe
Lining Method		Pipe Joint Length	
Total Length	80.3	Length Surveyed	80.3
Year Constructed		Year Renewed	

Misc

Flow Control		Media Label	DVD
Purpose		Consequence of Failure	
Pre-Cleaning	No Pre-Cleaning	Date Cleaned	
Weather		Location Code	
Additional Info		Location Details	

Custom

Custom 1	Custom 2
Custom 3	Custom 4
Custom 5	Custom 6
Custom 7	Custom 8
Custom 9	Custom 10

Project			
Reverse Setup ID		Sheet (Group) Number	
Imperial Units (US)		Pressure Value	
Work Order		Project	
		CAROLINA CROSSROADS	




EP-4902 A-B

Coating Method		Completed	
		Yes	
Insp Tech Used			
CCTV	Yes	Laser	No
Sidewall	No	Sonar	No
Zoom	No	Other	No

Inspection			
Inspection Status		Complete Inspection	
Reviewed By		Reviewer Certificate Number	

Count Groups			
Taps	0	Roots	0
Cracks / Fractures	4	Broken / Holes / Collapse	1
Deposits	0	Obstruction	0
Abandoned Survey	0		

Project: CAROLINA CROSSROADS	
Date: 10/13/2020 2:53:00 PM	Pipe Segment Reference: PIPE 4902
Street: ARROWWOOD	Upstream MH: 4902 A
Length Surveyed: 80.3	Downstream MH: 4902 B
Run Number:	Direction of Survey: Upstream
Height (Diameter): 30	Material: Reinforced Concrete Pipe

Distance	Fault Observation	Time	Picture
0.0	Access Point Catch Basin Severity: None Remarks: 4902 B	14	
0.0	Miscellaneous Water Level Severity: None Percent: 5	30	
15.1	Infiltration Stain Position: 1 To 4 Severity: None Joint Maint Weight: 1	01:59	

Distance	Fault Observation	Time	Picture
23.0	Miscellaneous General Observation Severity: None Remarks: GAP OBSERVATION 1.564	03:46	
31.3	Miscellaneous General Observation Severity: None Remarks: GAP OBSERVATION 1.454	05:17	
38.9	Fracture Circumferential Position: 11 To 12 Severity: None Joint Remarks: FRACTURE IN SPIGOT Struct Weight: 2	06:28	

EP-4902 A-B

Distance	Fault Observation	Time	Picture
38.9	Broken Position: 12 To 11 Severity: None Joint Remarks: SPIGOT BROKEN TAR TORN AND VISIBLE Struct Weight: 4	07:17	
38.9	Crack Longitudinal Position: 12 Severity: None Joint Struct Weight: 2	07:46	
39.6	Miscellaneous General Observation Severity: None Remarks: GAP OBSERVATION 1.931	09:04	

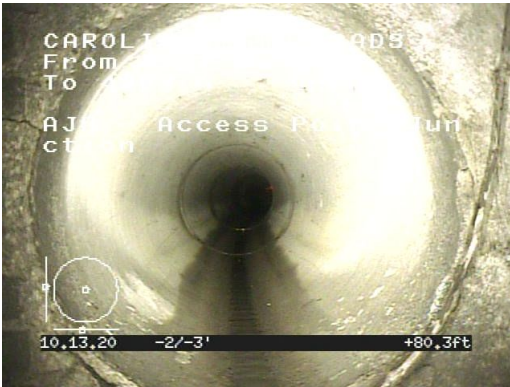
EP-4902 A-B

Distance	Fault Observation	Time	Picture
47.4	Crack Circumferential Position: 11 To 12 Severity: None Joint Remarks: CRACKS IN BELL Struct Weight: 1	10:18	
47.4	Crack Longitudinal Position: 5 Severity: None Joint Struct Weight: 2	10:56	
47.4	Miscellaneous General Observation Severity: None Remarks: GAP OBSERVATION 1.911	11:44	

EP-4902 A-B

Distance	Fault Observation	Time	Picture
55.5	Miscellaneous General Observation Severity: None Remarks: GAP OBSERVATION 1.776	13:13	
63.5	Miscellaneous General Observation Severity: None Remarks: GAP OBSERVATION 1.631	14:34	
71.7	Miscellaneous General Observation Severity: None Remarks: GAP OBSERVATION 1.44	15:54	

EP-4902 A-B

Distance	Fault Observation	Time	Picture
80.3	<p>Access Point Junction Box Severity: None Remarks: 4902 A</p>	16:57	

Created with the  report generator

EP-4902 A-B

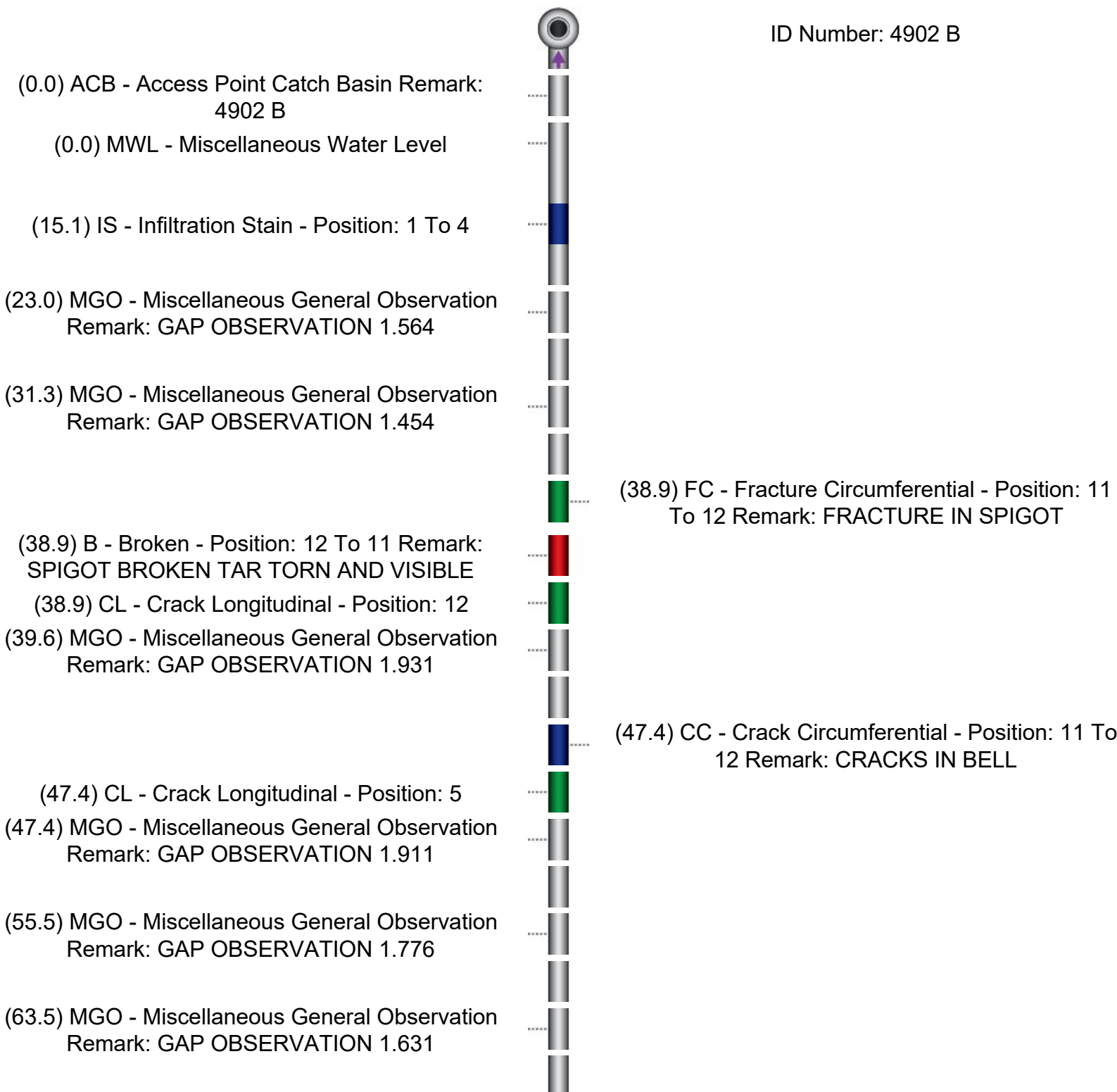


EP-4902 A-B

Project: CAROLINA CROSSROADS	
Date: 10/13/2020 2:53:00 PM	Pipe Segment Reference: PIPE 4902
Street: ARROWWOOD	Upstream MH: 4902 A
Length Surveyed: 80.3	Downstream MH: 4902 B
Run Number:	Direction of Survey: Upstream
Height (Diameter): 30	Material: Reinforced Concrete Pipe

Severity
Light-1
Moderate-2
Average-3
Heavy-4
Severe-5

ID Number: 4902 B



(71.7) MGO - Miscellaneous General Observation
Remark: GAP OBSERVATION 1.44

(80.3) AJB - Access Point Junction Box Remark:
4902 A

Total Distance: 80.3



ID Number: 4902 A

Created with the  report generator

EP-4902 A-B

Nassco C.C.T.V. Defect Code Information

Grade	Structural	O&M	Overall
5	0	0	0
4	4	0	4
3	0	0	0
2	6	0	6
1	1	1	2
Overall	11	1	12
Number of Defects	5	1	6
Pipe Rating	4123	1100	4123
Pipe Ratings Index	2.2	1	2

Nassco C.C.T.V. Defect Code Information

EP-4902 A-B

EP-4902 A-B

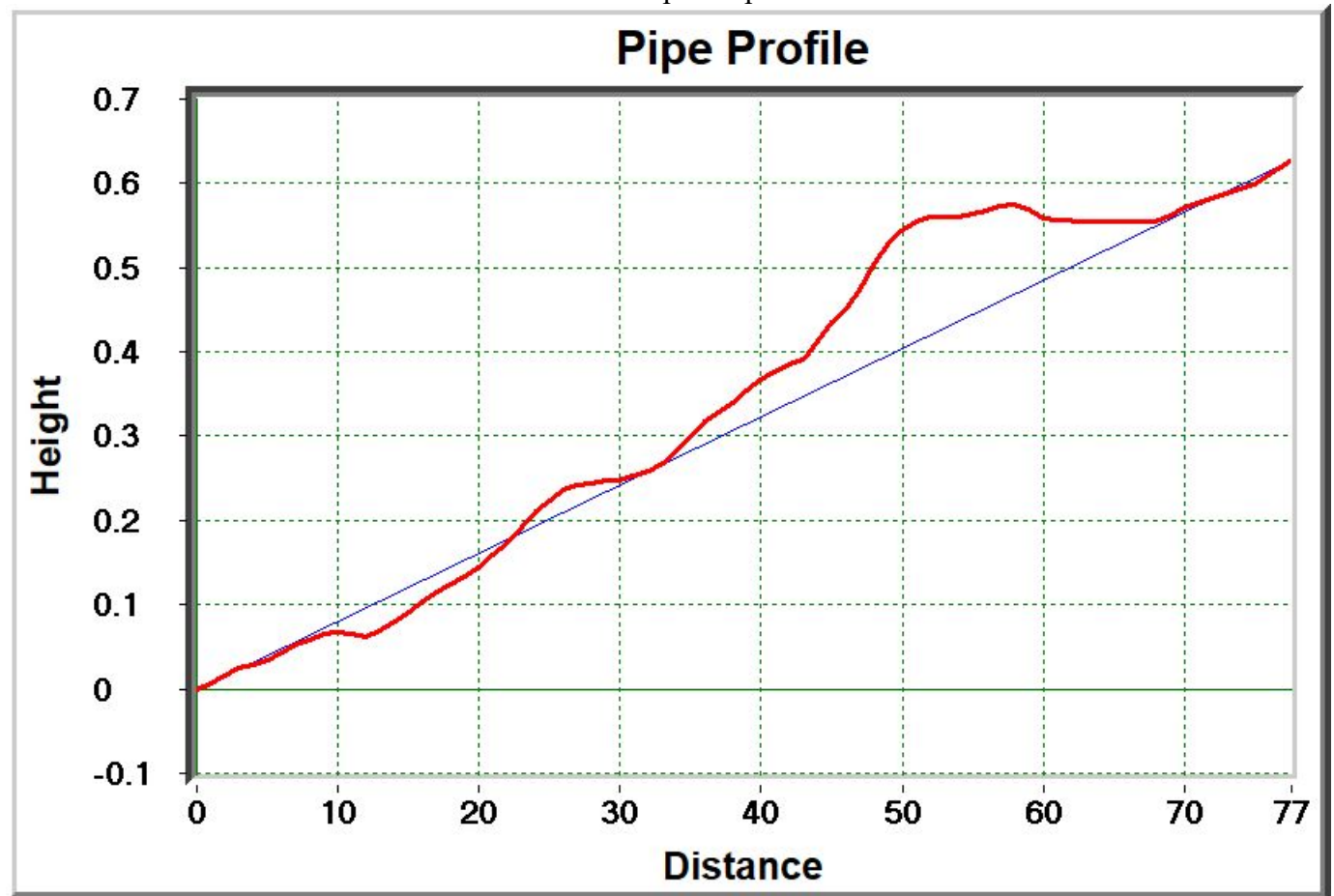
Distance	Video Ref	Code	Cont Defect	Value			Joint	Circumferential Location	
				Dimension		%		At / From	To
				1st	2nd				
0	14	ACB - Access Point Catch Basin							
		4902 B							
0	30	MWL - Miscellaneous Water Level				5			
15.1	119	IS - Infiltration Stain					X	1	4
23	226	MGO - Miscellaneous General Observation							
		GAP OBSERVATION 1.564							
31.3	317	MGO - Miscellaneous General Observation							
		GAP OBSERVATION 1.454							
38.9	388	FC - Fracture Circumferential				X	11	12	
		FRACTURE IN SPIGOT							
38.9	437	B - Broken				X	12	11	
		SPIGOT BROKEN TAR TORN AND VISIBLE							
38.9	466	CL - Crack Longitudinal				X	12		
39.6	544	MGO - Miscellaneous General Observation							
		GAP OBSERVATION 1.931							
47.4	618	CC - Crack Circumferential				X	11	12	
		CRACKS IN BELL							
47.4	656	CL - Crack Longitudinal				X	5		
47.4	704	MGO - Miscellaneous General Observation							
		GAP OBSERVATION 1.911							
55.5	793	MGO - Miscellaneous General Observation							
		GAP OBSERVATION 1.776							
63.5	874	MGO - Miscellaneous General Observation							
		GAP OBSERVATION 1.631							
71.7	954	MGO - Miscellaneous General Observation							
		GAP OBSERVATION 1.44							
80.3	1017	AJB - Access Point Junction Box							
		4902 A							

Project: CAROLINA CROSSROADS

Date: 10/13/2020 2:53:00 PM	Pipe Segment Reference: PIPE 4902
Street: ARROWWOOD	Upstream MH: 4902 A
Length Surveyed: 80.3	Downstream MH: 4902 B
Run Number:	Direction of Survey: Upstream
Height (Diameter): 30	Material: Reinforced Concrete Pipe

Percent Grade Mean: 0.87
Plot Distance From: 0 To 81
Max Percent Difference: 3
Number of Window Values: 1
Percent Difference Max for Windows Values: 60
Number of Feet to Average: 1
Final number of points plotted: 69

EP-4902 A-B





EP-4902 C-B

Project Information

Surveyor Name	GCS	Certificate Number	U-0917-07009391
Owner		Customer	
Drainage Area		PO Number	
Pipe Segment Reference	PIPE 4902	Date	10/13/2020 13:57
Street	ARROWWOOD	City	COLUMBIA
Comments			

Manhole

Upstream MH	4902 B	Rim to Invert (U)	
Grade to Invert (U)		Rim to Grade (U)	
Downstream MH	4902 C	Rim to Invert (D)	
Grade to Invert (D)		Rim to Grade (D)	
Pipe Use	Stormwater Pipe	Direction of Survey	Upstream

Pipe

Height (Diameter)	30	Width	
Shape	Circular	Material	Reinforced Concrete Pipe
Lining Method		Pipe Joint Length	
Total Length	44	Length Surveyed	44
Year Constructed		Year Renewed	

Misc

Flow Control		Media Label	DVD
Purpose		Consequence of Failure	
Pre-Cleaning	No Pre-Cleaning	Date Cleaned	
Weather		Location Code	
Additional Info		Location Details	

Custom

Custom 1	Custom 2
Custom 3	Custom 4
Custom 5	Custom 6
Custom 7	Custom 8
Custom 9	Custom 10

Project			
Reverse Setup ID		Sheet (Group) Number	
Imperial Units (US)		Pressure Value	
Work Order		Project	
		CAROLINA CROSSROADS	

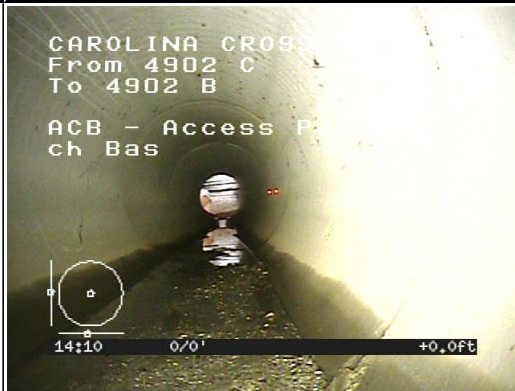


EP-4902 C-B

Coating Method		Completed	
		Yes	
Insp Tech Used			
CCTV	Yes	Laser	No
Sidewall	No	Sonar	No
Zoom	No	Other	No

Inspection	
Inspection Status	Complete Inspection
Reviewed By	Reviewer Certificate Number

Count Groups			
Taps	0	Roots	0
Cracks / Fractures	0	Broken / Holes / Collapse	2
Deposits	0	Obstruction	0
Abandoned Survey	0		

Project: CAROLINA CROSSROADS	
Date: 10/13/2020 1:57:00 PM	Pipe Segment Reference: PIPE 4902
Street: ARROWWOOD	Upstream MH: 4902 B
Length Surveyed: 44	Downstream MH: 4902 C
Run Number:	Direction of Survey: Upstream
Height (Diameter): 30	Material: Reinforced Concrete Pipe

Distance	Fault Observation	Time	Picture
0.0	Access Point Catch Basin Severity: None Remarks: 4902 C	21	
0.0	Miscellaneous Water Level Severity: None Percent: 5	36	
3.3	Miscellaneous General Observation Severity: None Remarks: MUD IN PIPE	01:00	

Distance	Fault Observation	Time	Picture
4.2	Miscellaneous General Observation Severity: None Remarks: GAP OBSERVATION 1.61	02:15	
11.9	Broken Position: 7 To 8 Severity: None Joint Remarks: BROKEN SPIGOT 5.541 Struct Weight: 4	04:13	
19.9	Miscellaneous General Observation Severity: None Remarks: GAP OBSERVATION 1.086	05:57	

EP-4902 C-B

Distance	Fault Observation	Time	Picture
27.6	Surface Damage Aggregate Missing Position: 3 To 5 Severity: None Joint Remarks: REBAR EXPOSED Struct Weight: 4	06:56	
27.9	Broken Position: 2 Severity: None Joint Remarks: CHIPPED SPIGOT TAR EXPOSED 4.165 Struct Weight: 4	8:10	
27.9	Miscellaneous General Observation Severity: None Remarks: GAP OBSERVATION 1.479	09:20	

EP-4902 C-B

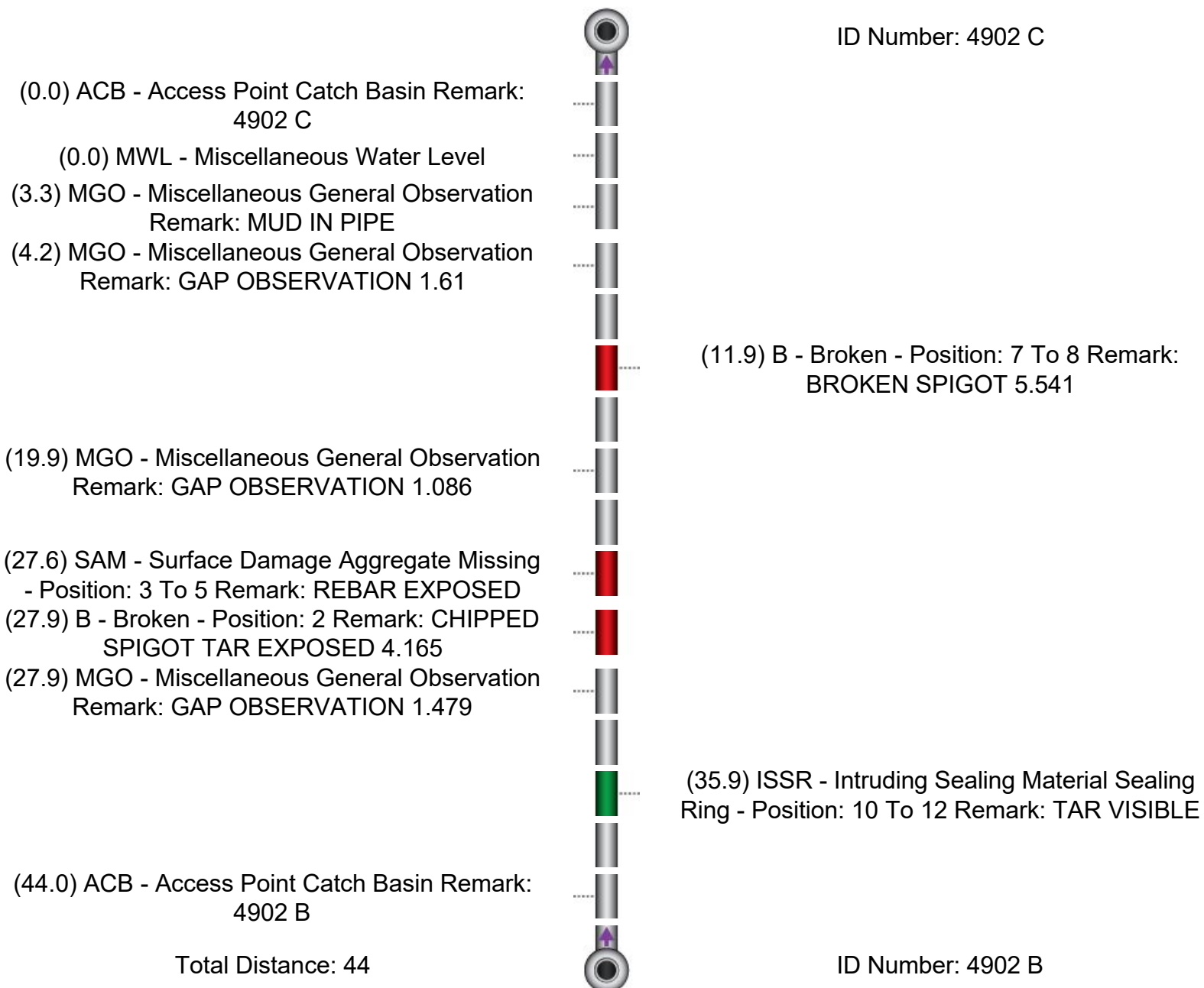
Distance	Fault Observation	Time	Picture
35.9	Intruding Sealing Material Sealing Ring Position: 10 To 12 Severity: None Percent: 5 Remarks: TAR VISIBLE Maint Weight: 2	10:59	
44.0	Access Point Catch Basin Severity: None Remarks: 4902 B	11:35	

Created with the  report generator

EP-4902 C-B

Project: CAROLINA CROSSROADS	
Date: 10/13/2020 1:57:00 PM	Pipe Segment Reference: PIPE 4902
Street: ARROWWOOD	Upstream MH: 4902 B
Length Surveyed: 44	Downstream MH: 4902 C
Run Number:	Direction of Survey: Upstream
Height (Diameter): 30	Material: Reinforced Concrete Pipe

Severity
Light-1
Moderate-2
Average-3
Heavy-4
Severe-5



Nassco C.C.T.V. Defect Code Information

Grade	Structural	O&M	Overall
5	0	0	0
4	12	0	12
3	0	0	0
2	0	2	2
1	0	0	0
Overall	12	2	14
Number of Defects	3	1	4
Pipe Rating	4300	2100	4321
Pipe Ratings Index	4	2	3.5

Nassco C.C.T.V. Defect Code Information

EP-4902 C-B

EP-4902 C-B

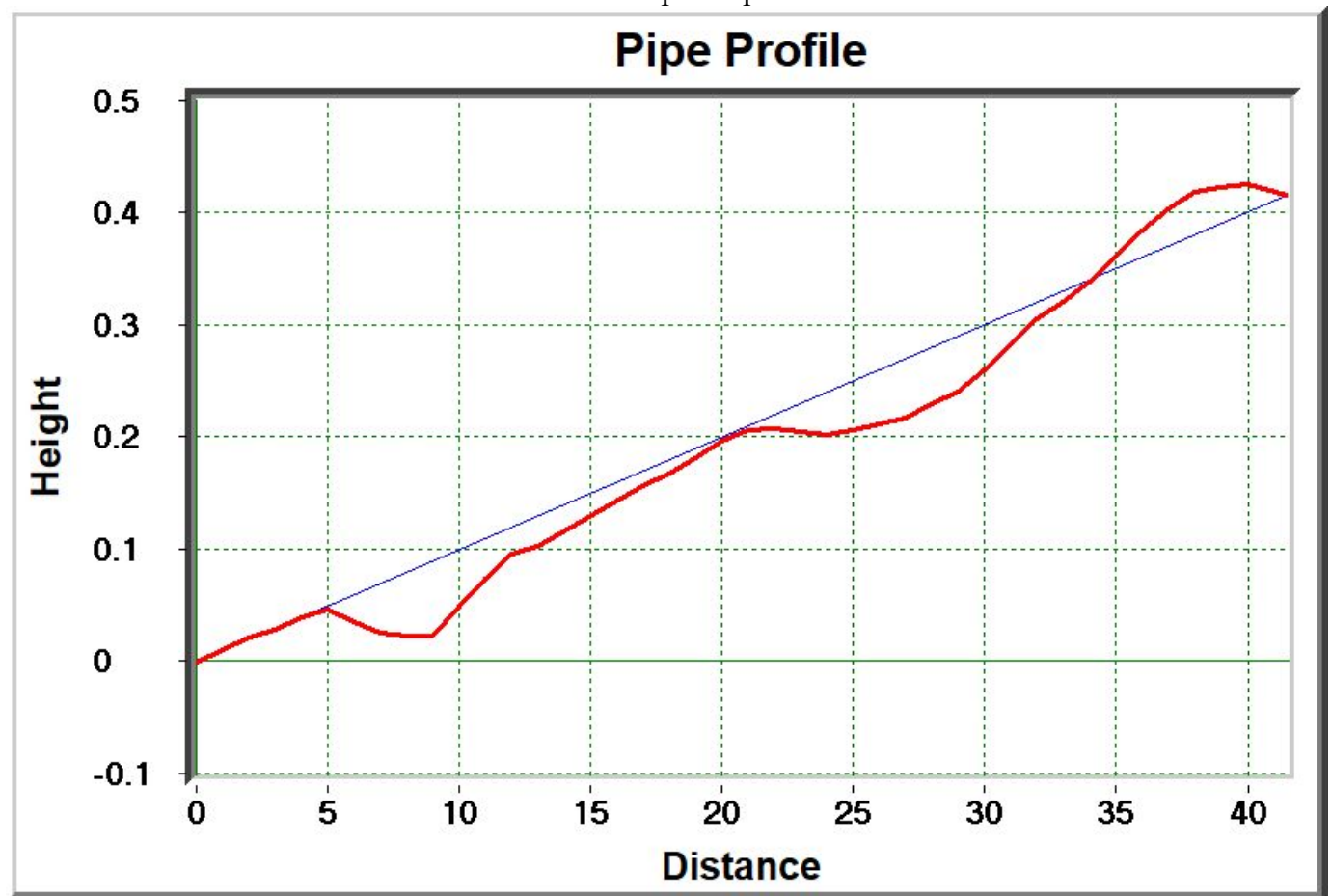
Distance	Video Ref	Code	Cont Defect	Value			Joint	Circumferential Location	
				Dimension		%		At / From	To
				1st	2nd				
0	21	ACB - Access Point Catch Basin							
		4902 C							
0	36	MWL - Miscellaneous Water Level				5			
3.3	60	MGO - Miscellaneous General Observation							
		MUD IN PIPE							
4.2	135	MGO - Miscellaneous General Observation							
		GAP OBSERVATION 1.61							
11.9	253	B - Broken					X	7	8
		BROKEN SPIGOT 5.541							
19.9	357	MGO - Miscellaneous General Observation							
		GAP OBSERVATION 1.086							
27.6	416	SAM - Surface Damage Aggregate Missing					X	3	5
		REBAR EXPOSED							
27.9	490	B - Broken					X	2	
		CHIPPED SPIGOT TAR EXPOSED 4.165							
27.9	560	MGO - Miscellaneous General Observation							
		GAP OBSERVATION 1.479							
35.9	659	ISSR - Intruding Sealing Material Sealing Ring				5		10	12
		TAR VISIBLE							
44	695	ACB - Access Point Catch Basin							
		4902 B							

Project: CAROLINA CROSSROADS

Date: 10/13/2020 1:57:00 PM	Pipe Segment Reference: PIPE 4902
Street: ARROWWOOD	Upstream MH: 4902 B
Length Surveyed: 44	Downstream MH: 4902 C
Run Number:	Direction of Survey: Upstream
Height (Diameter): 30	Material: Reinforced Concrete Pipe

Percent Grade Mean: 1.03
Plot Distance From: 0 To 45
Max Percent Difference: 3
Number of Window Values: 1
Percent Difference Max for Windows Values: 60
Number of Feet to Average: 1
Final number of points plotted: 38

EP-4902 C-B





EP-4902 C-D

Project Information

Surveyor Name	GCS	Certificate Number	U-0917-07009391
Owner		Customer	
Drainage Area		PO Number	
Pipe Segment Reference	PIPE 4902	Date	10/13/2020 14:19
Street	ARROWWOOD	City	COLUMBIA
Comments			

Manhole

Upstream MH	4902 C	Rim to Invert (U)	
Grade to Invert (U)		Rim to Grade (U)	
Downstream MH	4902 D	Rim to Invert (D)	
Grade to Invert (D)		Rim to Grade (D)	
Pipe Use	Stormwater Pipe	Direction of Survey	Downstream

Pipe

Height (Diameter)	30	Width	
Shape	Circular	Material	Reinforced Concrete Pipe
Lining Method		Pipe Joint Length	
Total Length	8.5	Length Surveyed	8.5
Year Constructed		Year Renewed	

Misc

Flow Control		Media Label	DVD
Purpose		Consequence of Failure	
Pre-Cleaning	No Pre-Cleaning	Date Cleaned	
Weather		Location Code	
Additional Info		Location Details	

Custom

Custom 1	Custom 2
Custom 3	Custom 4
Custom 5	Custom 6
Custom 7	Custom 8
Custom 9	Custom 10




Project			
Reverse Setup ID		Sheet (Group) Number	
Imperial Units (US)		Pressure Value	
Work Order		Project	
		CAROLINA CROSSROADS	

Coating Method		Completed	
		Yes	
Insp Tech Used			
CCTV	Yes	Laser	No
Sidewall	No	Sonar	No
Zoom	No	Other	No

Inspection	
Inspection Status	Complete Inspection
Reviewed By	Reviewer Certificate Number

Count Groups			
Taps	0	Roots	0
Cracks / Fractures	1	Broken / Holes / Collapse	0
Deposits	0	Obstruction	0
Abandoned Survey	0		

Project: CAROLINA CROSSROADS	
Date: 10/13/2020 2:19:00 PM	Pipe Segment Reference: PIPE 4902
Street: ARROWWOOD	Upstream MH: 4902 C
Length Surveyed: 8.5	Downstream MH: 4902 D
Run Number:	Direction of Survey: Downstream
Height (Diameter): 30	Material: Reinforced Concrete Pipe

Distance	Fault Observation	Time	Picture
0.0	Access Point Catch Basin Severity: None Remarks: 4902 C	14	
0.0	Miscellaneous Water Level Severity: None Percent: 0	30	
0.0	Miscellaneous General Observation Severity: None Remarks: DIRT AND DEBRIS IN PIPE	53	

Distance	Fault Observation	Time	Picture
0.8	Fracture Circumferential Position: 4 To 5 Severity: None Joint Remarks: SPIGOT FRACTURED Struct Weight: 2	02:00	
8.5	Access Point Discharge Point Severity: None Remarks: 4902 D	02:38	

Created with the  report generator

EP-4902 C-D



EP-4902 C-D

Project: CAROLINA CROSSROADS	
Date: 10/13/2020 2:19:00 PM	Pipe Segment Reference: PIPE 4902
Street: ARROWWOOD	Upstream MH: 4902 C
Length Surveyed: 8.5	Downstream MH: 4902 D
Run Number:	Direction of Survey: Downstream
Height (Diameter): 30	Material: Reinforced Concrete Pipe

Severity

Light-1
Moderate-2
Average-3
Heavy-4
Severe-5

(0.0) ACB - Access Point Catch Basin Remark: 4902 C

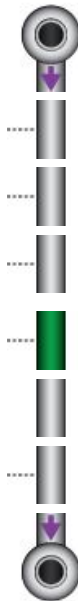
(0.0) MWL - Miscellaneous Water Level

(0.0) MGO - Miscellaneous General Observation Remark: DIRT AND DEBRIS IN PIPE

(0.8) FC - Fracture Circumferential - Position: 4 To 5 Remark: SPIGOT FRACTURED

(8.5) ADP - Access Point Discharge Point Remark: 4902 D

Total Distance: 8.5



ID Number: 4902 C

ID Number: 4902 D

Created with the  report generator

Nassco C.C.T.V. Defect Code Information

Grade	Structural	O&M	Overall
5	0	0	0
4	0	0	0
3	0	0	0
2	2	0	2
1	0	0	0
Overall	2	0	2
Number of Defects	1	0	1
Pipe Rating	2100	0000	2100
Pipe Ratings Index	2	0	2

Nassco C.C.T.V. Defect Code Information

EP-4902 C-D

Distance	Video Ref	Code	Cont Defect	Value			Joint	Circumferential Location	
				Dimension		%		At / From	To
				1st	2nd				
0	14	ACB - Access Point Catch Basin							
		4902 C							
0	30	MWL - Miscellaneous Water Level				0			
0	53	MGO - Miscellaneous General Observation							
		DIRT AND DEBRIS IN PIPE							
0.8	120	FC - Fracture Circumferential					X	4	5
		SPIGOT FRACTURED							
8.5	158	ADP - Access Point Discharge Point							
		4902 D							

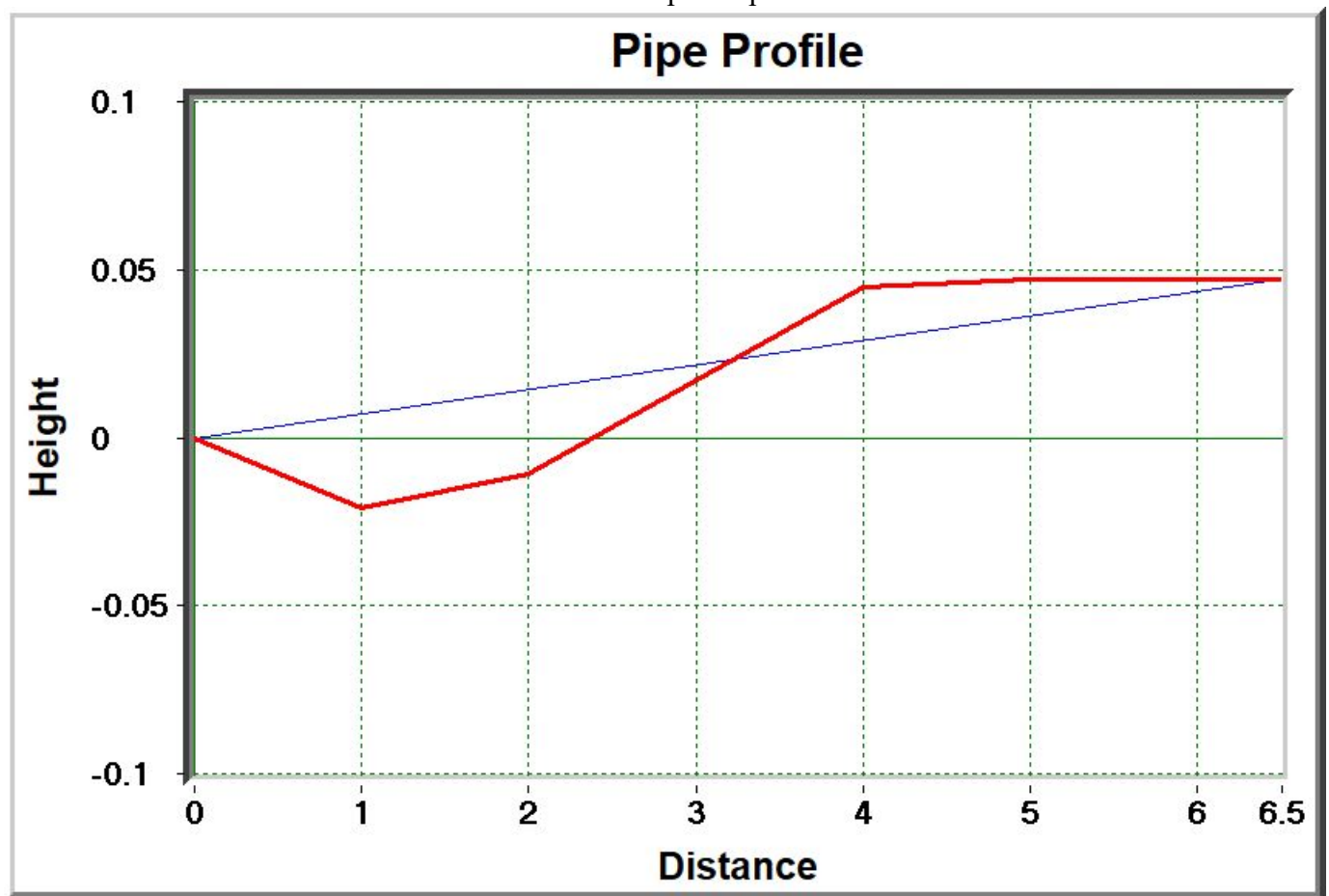
Created with the  report generator

EP-4902 C-D

Project: CAROLINA CROSSROADS	
Date: 10/13/2020 2:19:00 PM	Pipe Segment Reference: PIPE 4902
Street: ARROWWOOD	Upstream MH: 4902 C
Length Surveyed: 8.5	Downstream MH: 4902 D
Run Number:	Direction of Survey: Downstream
Height (Diameter): 30	Material: Reinforced Concrete Pipe

Percent Grade Mean: 0.40
 Plot Distance From: 0 To 9
 Max Percent Difference: 3
 Number of Window Values: 1
 Percent Difference Max for Windows Values: 60
 Number of Feet to Average: 1
 Final number of points plotted: 6

EP-4902 C-D



Pipe Graphic Report of PSR 4902 C

for HDR

Setup	7	Surveyor	GCS	Certificate #	U-0917-07009391	System Owner	SCDOT
Drainage	Survey Customer						
P/O #		Date	2020/11/16	Time	11:24	Street	I-126
City	WEST COLUMBIA	Further location details					
Up	4902 H	Rim to invert		Grade to invert		Rim to grade	Ft
Down	4902 I	Rim to invert		Grade to invert		Rim to grade	Ft
Use	Stormwater	Direction	Upstream	Flow control		Media No	
Shape	Circular	Height	24	Width	ins	Preclean Z	Date Cleaned
Material	Reinforced Concrete Pipe	Joint length		Ft	Total length	67.2	Ft
Lining		Year laid		Year rehabilitated		Weather	
Purpose		Cat					
Additional info						Structural	O & M
Location						Miscellaneous	Hydraulic
Project	Carolina Crossroads	Work Order					
Northing		Easting		Elevation			
Coordinate System		GPS Accuracy					



SCA Underground
Phone: (803) 730-3568

Address: PO box Suite 102, West Columbia, SC

CCTV Picture List of

4902 C

for HDR

Work Order	Setup 7
Video	Survey Date 2020/11/16
Path to picture files	E:\CAMERA WORK DATABASE\Snaps\CAROLNA CROSSROADS\
Path to video files	E:\CAMERA WORK DATABASE\Movies\CAROLNA CROSSROADS\
Path to media files	E:\CAMERA WORK DATABASE\Media\CAROLNA CROSSROADS\



Video Index **Count** 39.9 Ft
Code Crack Longitudinal
Remarks
File Name 30.jpg



Video Index **Count** 43.9 Ft
Code Infill Stain
Remarks
File Name 31.jpg



Video Index **Count** 48.1 Ft
Code Crack Longitudinal
Remarks
File Name 32.jpg



Video Index **Count** 56.2 Ft
Code Intruding Sealing Ring
Remarks TAR GASKET NOT COMPLETELY INSTALLED
File Name 33.jpg



Video Index **Count** 64.6 Ft
Code Intruding Sealing Ring
Remarks
File Name 34.jpg



PIPELOGIX

SCA Underground

Phone: (803)730-3568

Address: PO box Suite 102, West Columbia, SC

Tabular Report of PSR 4902 C

for HDR

Setup	7	Surveyor	GCS	Certificate #	U-0917-07009391	System Owner	SCDOT
Drainage		Survey Customer					
P/O #		Date	2020/11/16	Time	11:24	Street	I-126
City	WEST COLUMBIA	Further location details					
Up	4902 H	Rim to invert		Grade to invert		Rim to grade	Ft
Down	4902 I	Rim to invert		Grade to invert		Rim to grade	Ft
Use	Stormwater	Direction	Up	Flow control		Media No	
Shape	Circular	Height	24	Width	ins	Preclean Z	
Material	Reinforced Concrete Pipe	Joint length		Ft	Total length	67.2	Ft
Lining		Year laid		Year rehabilitated		Weather	
Purpose		Cat				Pressure	
Additional info						Structural	O & M
Location						Miscellaneous	Constructional
Project	Carolina Crossroads					Work Order	
Northing		Easting				Elevation	
Coordinate System						GPS Accuracy	

Count	Video	CD	Code	In1	In2	%	JntFr	To	ImRef	Remarks
0.0			ST Start of Survey							
0.0			ACB Catch Basin							I
0.0			MWL Water Level			0				
39.9			CL Crack Longitudinal				J 12			
43.9			IS Infil Stain				J 10 02			
48.1			CL Crack Longitudinal				J 12			
56.2			ISSR Intruding Sealing Ring			10	06 09			TAR GASKET NOT COMPLETELY
64.6			ISSR Intruding Sealing Ring			5	08 10			
67.2			ACB Catch Basin							H
67.2			FH End of Survey							

67.2 Ft Total Length Surveyed

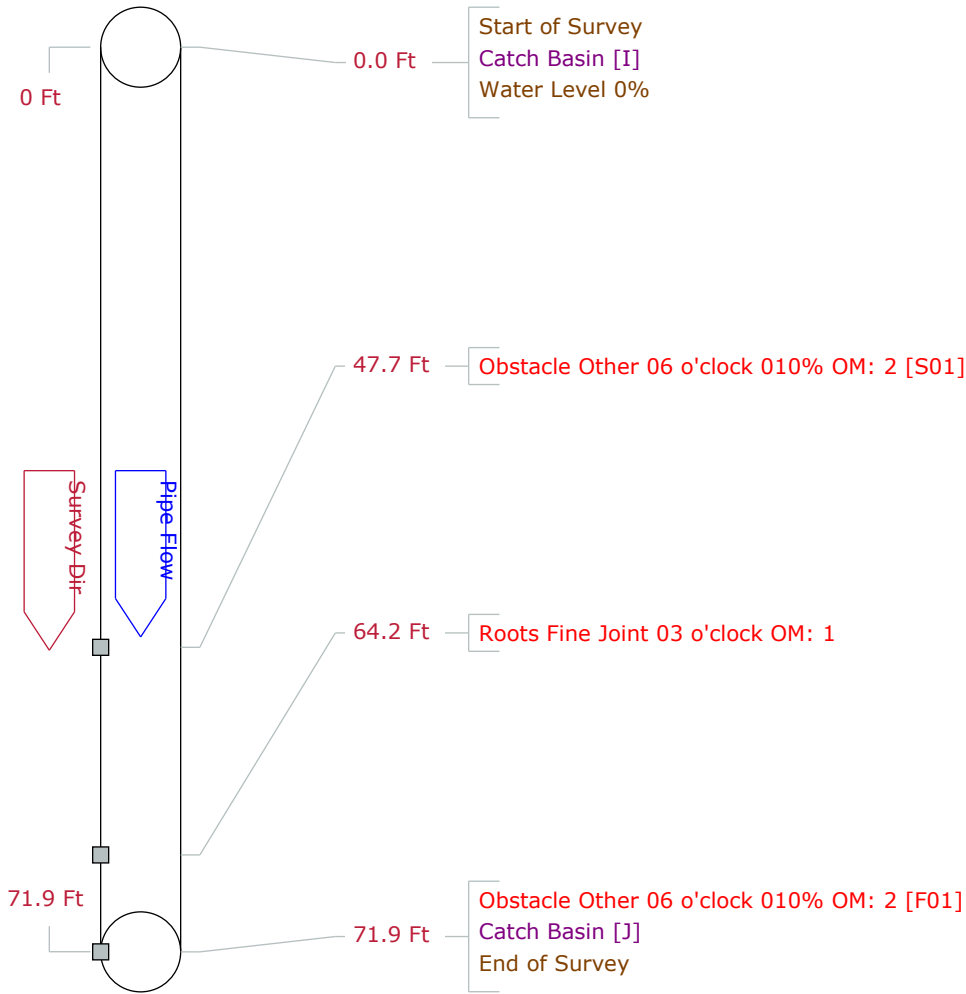
Scores	Structural:	Pipe Rating 4	Pipe Ratings Index 2	Quick Rating 2200
	O&M:	Pipe Rating 4	Pipe Ratings Index 2	Quick Rating 2200
	Overall	Pipe Rating 8	Pipe Ratings Index 4	Quick Rating 2400



SCA Underground
Phone:(803)730-3568

Pipe Graphic Report of PSR 4902 Afor HDR

Setup	5	Surveyor	GCS	Certificate #	U-0917-07009391	System Owner	SCDOT		
Drainage	Survey Customer								
P/O #	Date 2020/11/16		Time 10:52		Street I-126				
City	WEST COLUMBIA		Further location details						
Up	4902 I		Rim to invert		Grade to invert		Rim to grade	Ft	
Down	4902 J		Rim to invert		Grade to invert		Rim to grade	Ft	
Use	Stormwater		Direction	Downstream	Flow control		Media No		
Shape	Circular		Height	24	Width	ins	Preclean Z	Date Cleaned	
Material	Reinforced Concrete Pipe		Joint length	Ft	Total length	71.9	Ft	Length Surveyed 71.90	Ft
Lining			Year laid		Year rehabilitated		Weather		
Purpose			Cat						
Additional info						Structural	O & M	Constructional	
Location						Miscellaneous	Hydraulic		
Project	Carolina Crossroads					Work Order			
Northing	Easting					Elevation			
Coordinate System						GPS Accuracy			



CCTV Picture List of 4902 A for HDR

Work Order	Setup 5	
Video	Survey Date	2020/11/16
Path to picture files	E:\CAMERA WORK DATABASE\Snapshots\CAROLNA CROSSROADS\	
Path to video files	E:\CAMERA WORK DATABASE\Movies\CAROLNA CROSSROADS\	
Path to media files	E:\CAMERA WORK DATABASE\Media\CAROLNA CROSSROADS\	



Video Index Count 64.2 Ft

Code **Roots Fine Joint**

Remarks

File Name 26.jpg



Tabular Report of PSR 4902 A

for HDR

Setup	5	Surveyor	GCS	Certificate #	U-0917-07009391	System Owner	SCDOT
Drainage		Survey Customer					
P/O #		Date	2020/11/16	Time	10:52	Street	I-126
City	WEST COLUMBIA	Further location details					
Up	4902 I	Rim to invert		Grade to invert		Rim to grade	Ft
Down	4902 J	Rim to invert		Grade to invert		Rim to grade	Ft
Use	Stormwater	Direction	Down	Flow control		Media No	
Shape	Circular	Height	24	Width	ins	Preclean Z	Date Cleaned
Material	Reinforced Concrete Pipe	Joint length		Ft	Total length	71.9	Ft
Lining		Year laid		Year rehabilitated		Weather	
Purpose		Cat				Pressure	
Additional info						Structural	O & M
Location						Miscellaneous	Constructional
Project	Carolina Crossroads					Work Order	
Northing		Easting				Elevation	
Coordinate System						GPS Accuracy	

Count	Video	CD	Code	In1	In2	%	JntFr	To	ImRef	Remarks
0.0			ST Start of Survey							
0.0			ACB Catch Basin							I
0.0			MWL Water Level			0				
47.7		S01	OBZ Obstacle Other			10	06			
64.2			RFJ Roots Fine Joint				J 03			
71.9		F01	OBZ Obstacle Other			10	06			
71.9			ACB Catch Basin							J
71.9			FH End of Survey							

71.9 Ft Total Length Surveyed

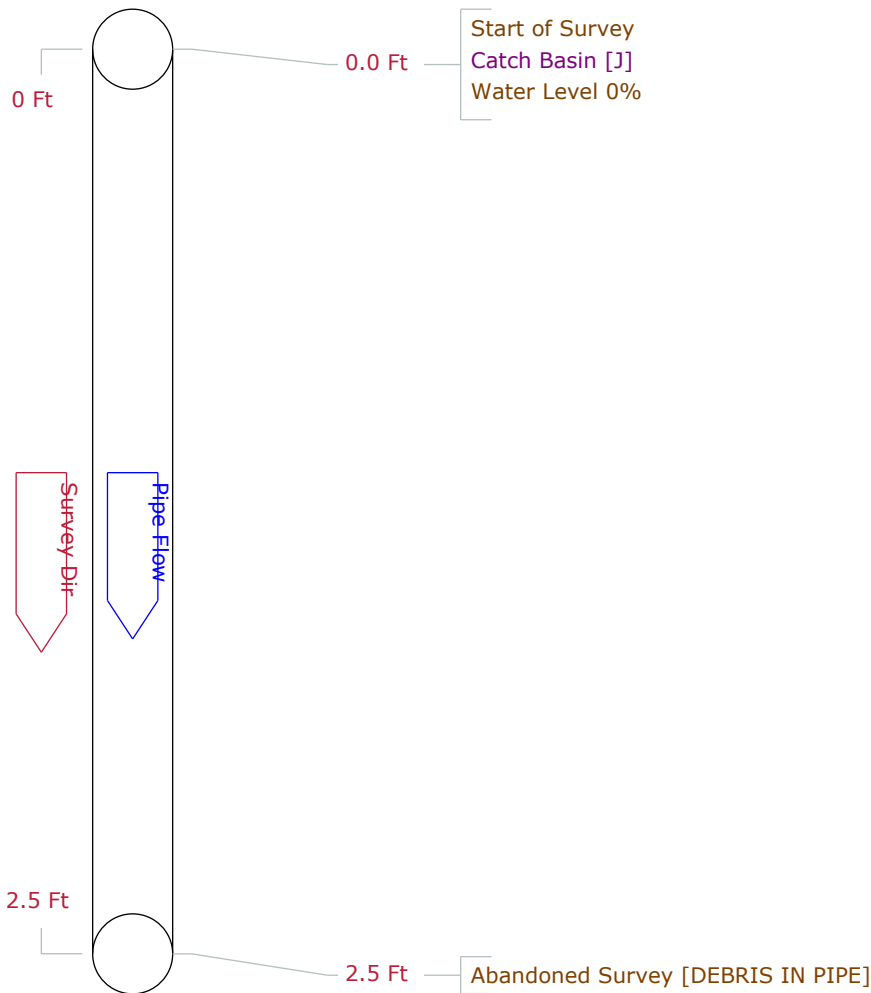
Scores	Structural:	Pipe Rating	0	Pipe Ratings Index	0	Quick Rating	0000
	O&M:	Pipe Rating	11	Pipe Ratings Index	1.8	Quick Rating	2511
	Overall	Pipe Rating	11	Pipe Ratings Index	1.8	Quick Rating	2511



SCA Underground
Phone:(803)730-3568

Pipe Graphic Report of PSR 4902 B for HDR

Setup	6	Surveyor	GCS	Certificate #	U-0917-07009391	System Owner	SCDOT	
Drainage	Survey Customer							
P/O #	Date 2020/11/16		Time 11:11		Street I-126			
City	WEST COLUMBIA		Further location details					
Up	4902 J		Rim to invert		Grade to invert		Rim to grade	Ft
Down	4902 K		Rim to invert		Grade to invert		Rim to grade	Ft
Use	Stormwater		Direction	Downstream	Flow control		Media No	
Shape	Circular		Height	24	Width	ins	Preclean Z	Date Cleaned
Material	Reinforced Concrete Pipe		Joint length	Ft	Total length	Ft	Length Surveyed	02.50 Ft
Lining			Year laid		Year rehabilitated		Weather	
Purpose			Cat					
Additional info						Structural		
Location						O & M		
Project						Carolina Crossroads		
Northing						Work Order		
Coordinate System						Easting		
						Elevation		
						GPS Accuracy		



Tabular Report of PSR 4902 B

for HDR

Setup	6	Surveyor	GCS	Certificate #	U-0917-07009391	System Owner	SCDOT
Drainage		Survey Customer					
P/O #		Date	2020/11/16	Time	11:11	Street	I-126
City	WEST COLUMBIA	Further location details					
Up	4902 J	Rim to invert		Grade to invert		Rim to grade	Ft
Down	4902 K	Rim to invert		Grade to invert		Rim to grade	Ft
Use	Stormwater	Direction	Down	Flow control		Media No	
Shape	Circular	Height	24	Width	ins	Preclean Z	
Material	Reinforced Concrete Pipe	Joint length		Ft	Total length	Ft	Length Surveyed 2.5
Lining		Year laid		Year rehabilitated		Weather	
Purpose		Cat				Pressure	
Additional info						Structural	O & M
Location						Miscellaneous	Constructional
Project	Carolina Crossroads					Work Order	
Northing		Easting				Elevation	
Coordinate System						GPS Accuracy	

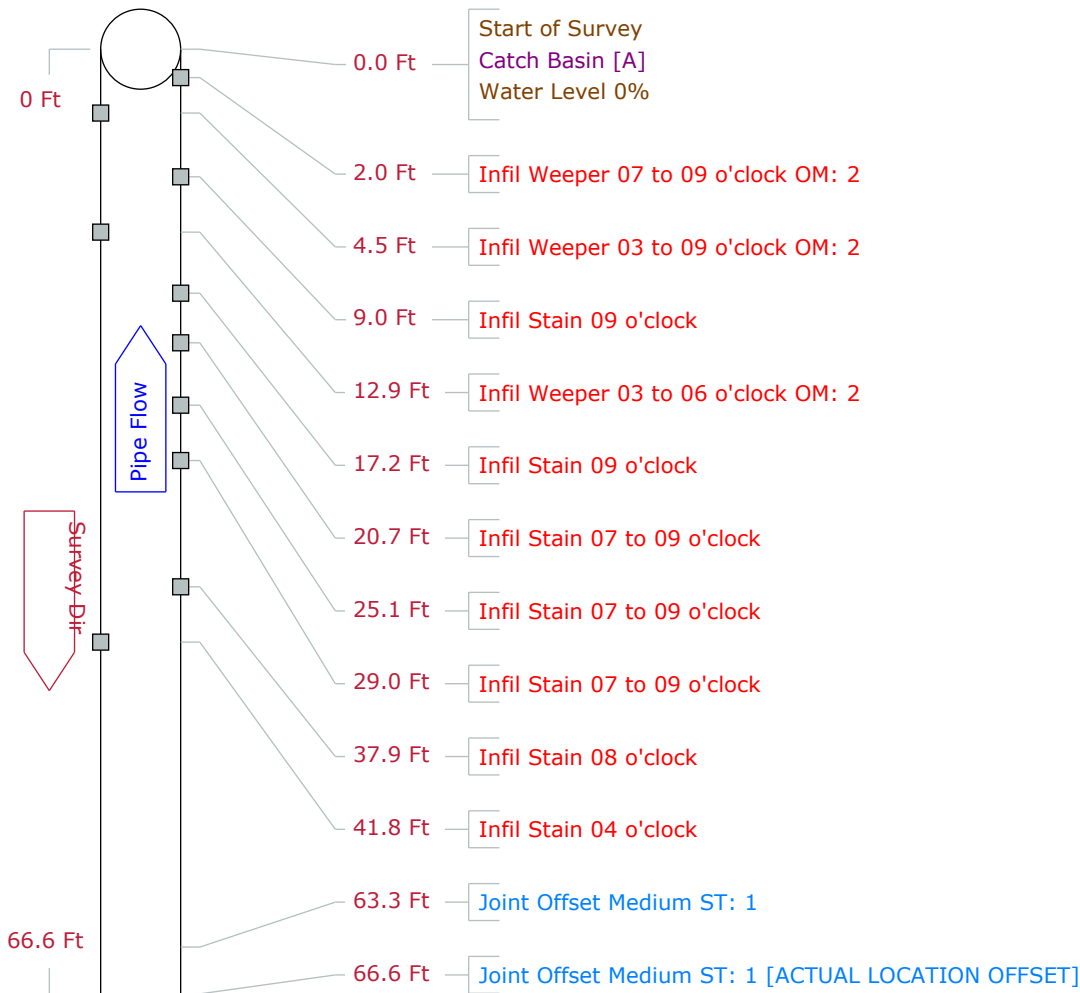
Count	Video	CD	Code	In1	In2	%	JntFr	To	ImRef	Remarks
0.0			ST Start of Survey							
0.0			ACB Catch Basin							J
0.0			MWL Water Level			0				
2.5			MSA Abandoned Survey							DEBRIS IN PIPE

2.5 Ft Total Length Surveyed

Scores	Structural:	Pipe Rating	0	Pipe Ratings Index	0	Quick Rating	0000
	O&M:	Pipe Rating	0	Pipe Ratings Index	0	Quick Rating	0000
	Overall	Pipe Rating	0	Pipe Ratings Index	0	Quick Rating	0000

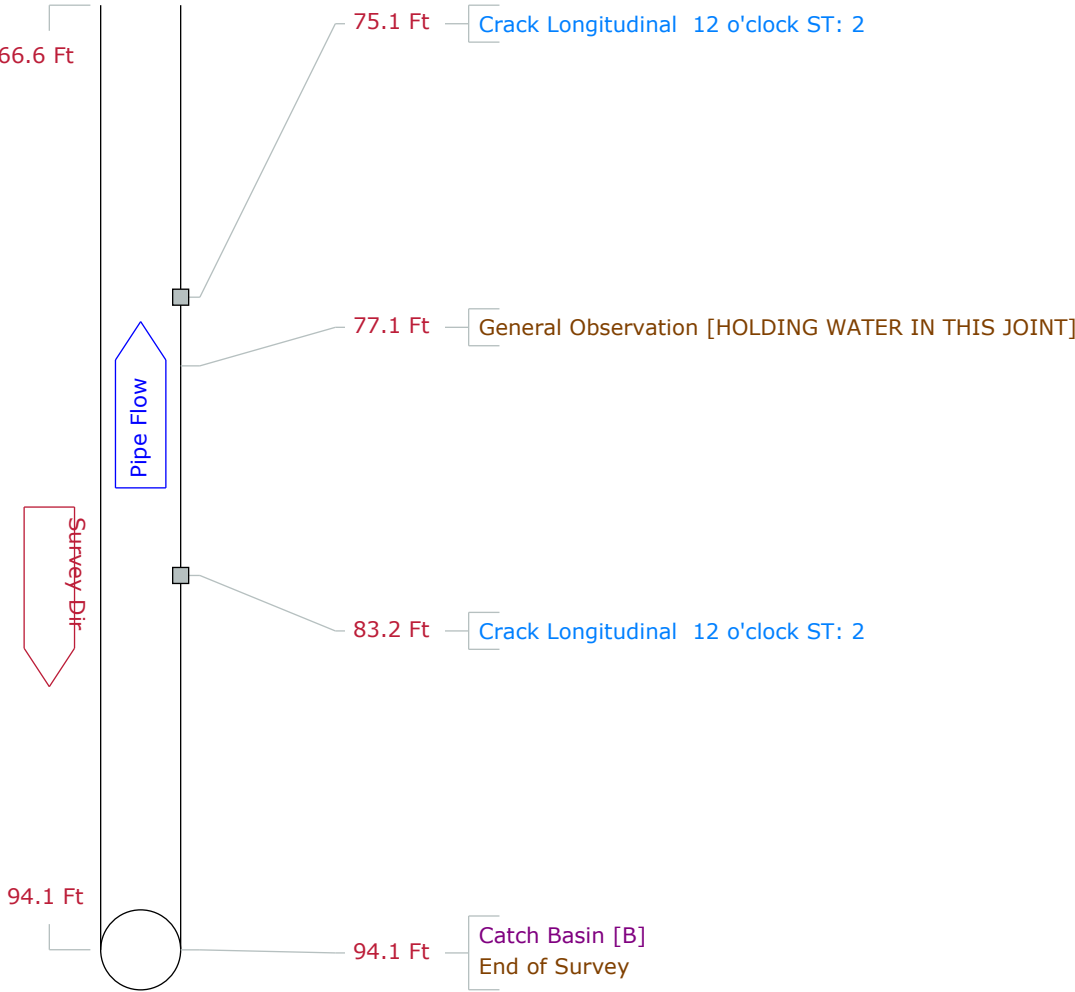
Pipe Graphic Report of PSR 4904 A for HDR

Setup	8	Surveyor	GCS	Certificate #	U-0917-07009391	System Owner	SCDOT	
Drainage	Survey Customer							
P/O #	Date 2020/11/16		Time 13:04		Street I-126			
City	WEST COLUMBIA		Further location details					
Up	4904 B		Rim to invert		Grade to invert		Rim to grade	Ft
Down	4904 A		Rim to invert		Grade to invert		Rim to grade	Ft
Use	Stormwater		Direction Upstream		Flow control		Media No	
Shape	Circular		Height 18		Width ins		Preclean Z	
Material	Reinforced Concrete Pipe		Joint length		Ft	Total length 94.1		Ft
Lining			Year laid		Year rehabilitated		Weather	
Purpose					Cat			
Additional info					Structural			
Location					O & M			
Project					Carolina Crossroads			
Northing					Easting			
Coordinate System					GPS Accuracy			



Pipe Graphic Report of PSR 4904 A for HDR

Setup	8	Surveyor	GCS	Certificate #	U-0917-07009391	System Owner	SCDOT
Drainage	Survey Customer						
P/O #		Date	2020/11/16	Time	13:04	Street	I-126
City	WEST COLUMBIA	Further location details					
Up	4904 B	Rim to invert		Grade to invert		Rim to grade	Ft
Down	4904 A	Rim to invert		Grade to invert		Rim to grade	Ft
Use	Stormwater	Direction	Upstream	Flow control		Media No	
Shape	Circular	Height	18	Width	ins	Preclean Z	Date Cleaned
Material	Reinforced Concrete Pipe	Joint length	Ft	Total length	94.1	Ft	Length Surveyed 94.10
Lining		Year laid		Year rehabilitated		Weather	
Purpose	Cat						
Additional info					Structural	O & M	Constructional
Location					Miscellaneous	Hydraulic	
Project	Carolina Crossroads	Work Order					
Northing		Easting		Elevation			
Coordinate System		GPS Accuracy					



Work Order	Setup 8		
Video	Survey Date	2020/11/16	
Path to picture files	E:\CAMERA WORK DATABASE\Snaps\CAROLNA CROSSROADS\		
Path to video files	E:\CAMERA WORK DATABASE\Movies\CAROLNA CROSSROADS\		
Path to media files	E:\CAMERA WORK DATABASE\Media\CAROLNA CROSSROADS\		



Video Index Count 2.0 Ft
Code Infil Weeper
Remarks
File Name 46.jpg



Video Index Count 4.5 Ft
Code Infil Weeper
Remarks
File Name 47.jpg



Video Index Count 9.0 Ft
Code Infil Stain
Remarks
File Name 48.jpg



Video Index Count 12.9 Ft
Code Infil Weeper
Remarks
File Name 49.jpg



Video Index Count 17.2 Ft
Code Infil Stain
Remarks
File Name 50.jpg



Video Index Count 20.7 Ft
Code Infil Stain
Remarks
File Name 51.jpg



Video Index Count 25.1 Ft
Code Infil Stain
Remarks
File Name 52.jpg



Work Order	Setup 8		
Video	Survey Date	2020/11/16	
Path to picture files	E:\CAMERA WORK DATABASE\Snaps\CAROLNA CROSSROADS\		
Path to video files	E:\CAMERA WORK DATABASE\Movies\CAROLNA CROSSROADS\		
Path to media files	E:\CAMERA WORK DATABASE\Media\CAROLNA CROSSROADS\		

**Video Index****Count** 29.0 Ft**Code** Infil Stain**Remarks****File Name** 53.jpg

PIPELOGIX INC

SCA Underground

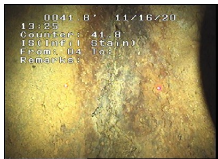
Phone: (803)730-3568

Address: PO box Suite 102, West Columbia, SC

Work Order			Setup 8
Video	Survey Date	2020/11/16	
Path to picture files	E:\CAMERA WORK DATABASE\Snapshots\CAROLNA CROSSROADS\		
Path to video files	E:\CAMERA WORK DATABASE\Movies\CAROLNA CROSSROADS\		
Path to media files	E:\CAMERA WORK DATABASE\Media\CAROLNA CROSSROADS\		



Video Index **Count** 37.9 Ft
Code Infil Stain
Remarks
File Name 54.jpg



Video Index **Count** 41.8 Ft
Code Infil Stain
Remarks
File Name 55.jpg



Video Index **Count** 63.3 Ft
Code Joint Offset Medium
Remarks
File Name 56.jpg



Video Index **Count** 75.1 Ft
Code Crack Longitudinal
Remarks
File Name 57.jpg



Tabular Report of PSR 4904 A

for HDR

Setup	8	Surveyor	GCS	Certificate #	U-0917-07009391	System Owner	SCDOT
Drainage		Survey Customer					
P/O #		Date	2020/11/16	Time	13:04	Street	I-126
City	WEST COLUMBIA	Further location details					
Up	4904 B	Rim to invert		Grade to invert		Rim to grade	Ft
Down	4904 A	Rim to invert		Grade to invert		Rim to grade	Ft
Use	Stormwater	Direction	Up	Flow control		Media No	
Shape	Circular	Height	18	Width	ins	Preclean Z	
Material	Reinforced Concrete Pipe	Joint length		Ft	Total length	94.1	Ft
Lining		Year laid		Year rehabilitated		Weather	
Purpose		Cat				Pressure	
Additional info						Structural	O & M
Location						Miscellaneous	Constructional
Project	Carolina Crossroads					Work Order	
Northing		Easting				Elevation	
Coordinate System						GPS Accuracy	

Count	Video	CD	Code	In1	In2	%	JntFr	To	ImRef	Remarks
0.0			ST Start of Survey							
0.0			ACB Catch Basin							A
0.0			MWL Water Level			0				
2.0			IW Infil Weeper				J	07	09	
4.5			IW Infil Weeper				J	03	09	
9.0			IS Infil Stain				J	09		
12.9			IW Infil Weeper				J	03	06	
17.2			IS Infil Stain				J	09		
20.7			IS Infil Stain				J	07	09	
25.1			IS Infil Stain				J	07	09	
29.0			IS Infil Stain				J	07	09	
37.9			IS Infil Stain				J	08		
41.8			IS Infil Stain				J	04		
63.3			JOM Joint Offset Medium							
66.6			JOM Joint Offset Medium							ACTUAL LOCATION OFFSET
75.1			CL Crack Longitudinal				J	12		
77.1			MGO General Observation							HOLDING WATER IN THIS JOINT
83.2			CL Crack Longitudinal				J	12		
94.1			ACB Catch Basin							B
94.1			FH End of Survey							

94.1 Ft Total Length Surveyed

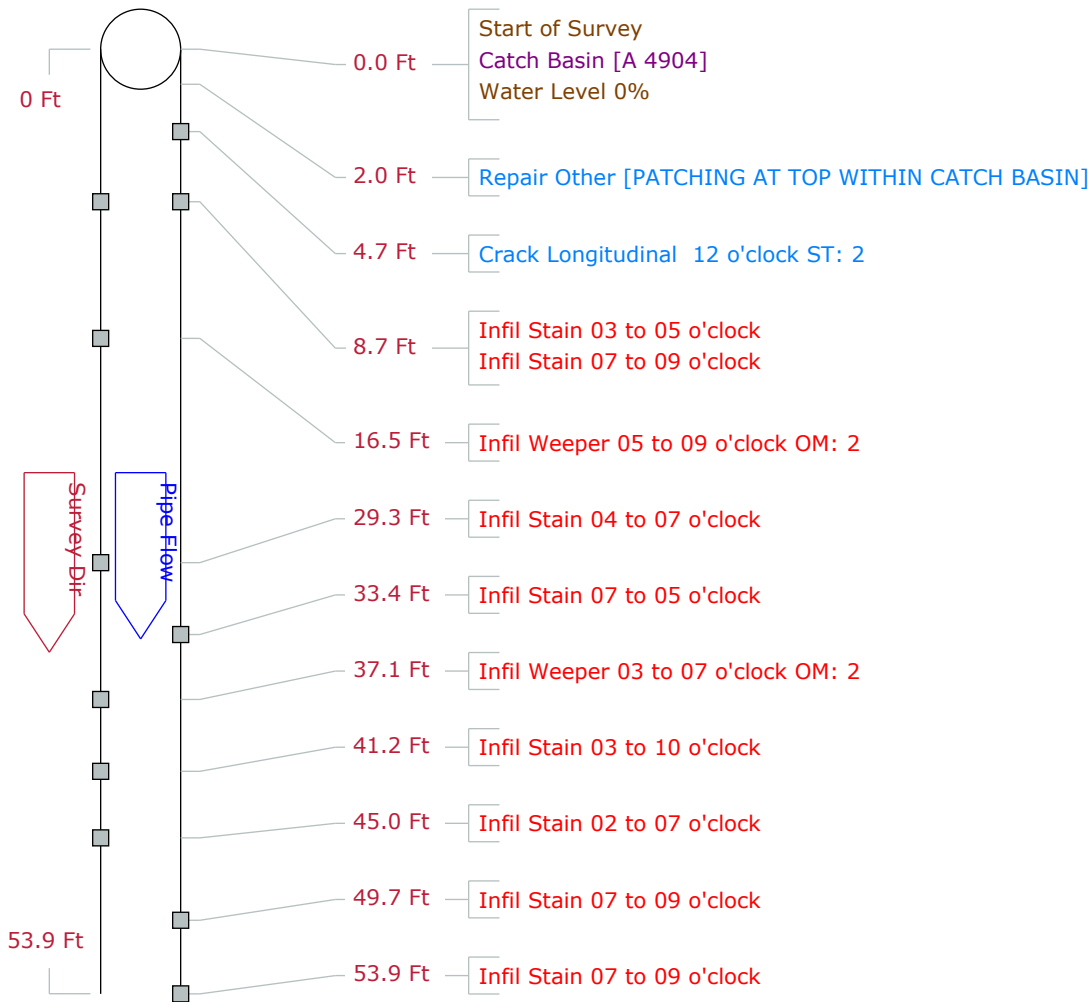
Scores	Structural:	Pipe Rating	6	Pipe Ratings Index	1.5	Quick Rating	2212
	O&M:	Pipe Rating	6	Pipe Ratings Index	2	Quick Rating	2300
	Overall	Pipe Rating	12	Pipe Ratings Index	3.5	Quick Rating	2512



SCA Underground
Phone:(803)730-3568

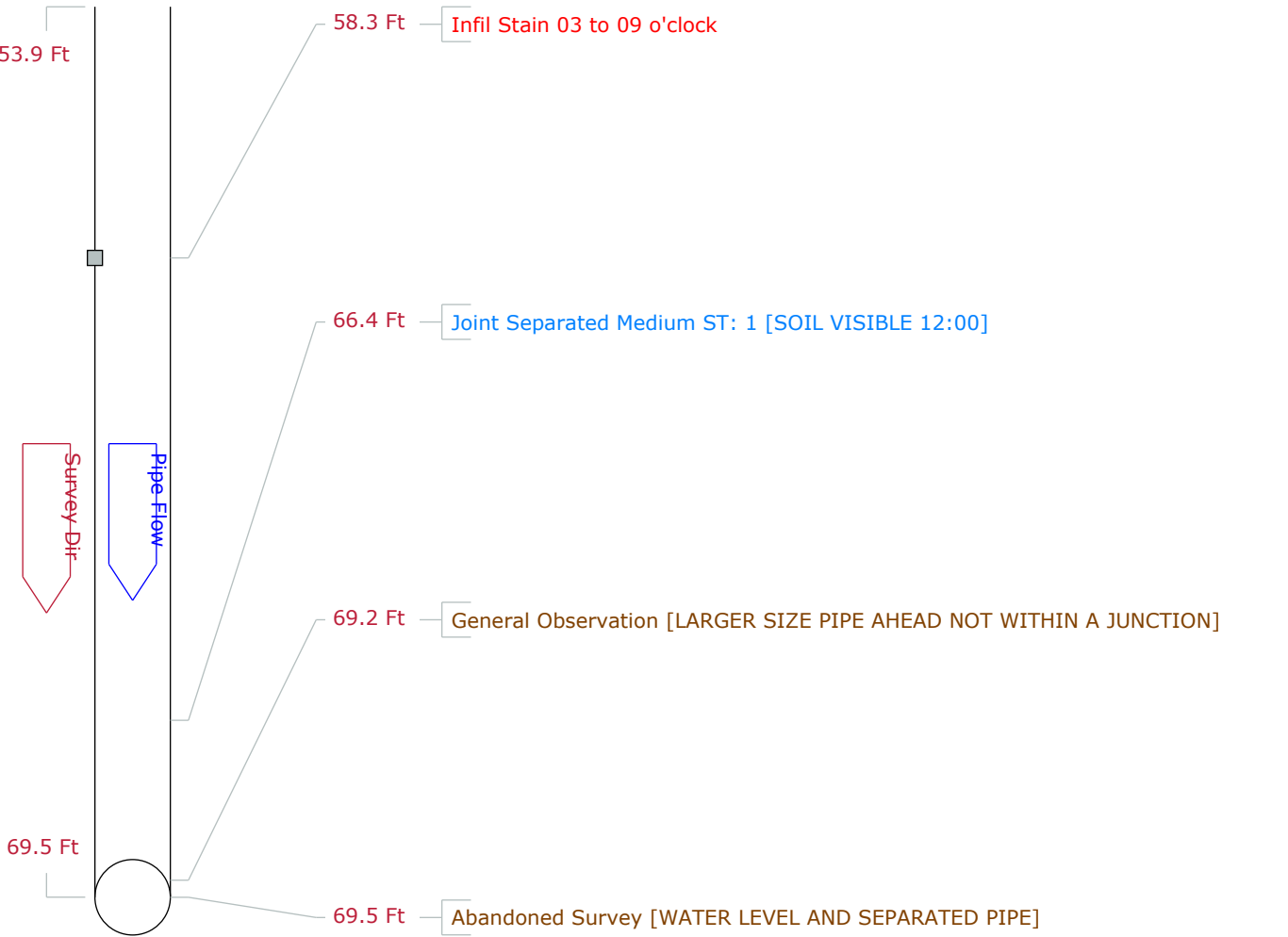
Pipe Graphic Report of PSR 4904 B for HDR

Setup	9	Surveyor	GCS	Certificate #	U-0917-07009391	System Owner	SCDOT			
Drainage	Survey Customer									
P/O #	Date 2020/11/16		Time 13:41		Street I-126					
City	WEST COLUMBIA		Further location details							
Up	4904 A		Rim to invert		Grade to invert		Rim to grade	Ft		
Down	4904 C		Rim to invert		Grade to invert		Rim to grade	Ft		
Use	Stormwater		Direction	Downstream	Flow control		Media No			
Shape	Circular		Height	18	Width	ins	Preclean Z	Date Cleaned		
Material	Reinforced Concrete Pipe		Joint length		Ft	Total length	Ft	Length Surveyed 69.50	Ft	
Lining			Year laid		Year rehabilitated		Weather			
Purpose					Cat					
Additional info						Structural			O & M	Constructional
Location						Miscellaneous			Hydraulic	
Project	Carolina Crossroads					Work Order				
Northing			Easting			Elevation				
Coordinate System			GPS Accuracy							



Pipe Graphic Report of PSR 4904 B
 for HDR

Setup	9	Surveyor	GCS	Certificate #	U-0917-07009391	System Owner	SCDOT		
Drainage	Survey Customer								
P/O #	Date 2020/11/16		Time 13:41		Street I-126				
City	WEST COLUMBIA		Further location details						
Up	4904 A		Rim to invert		Grade to invert		Rim to grade	Ft	
Down	4904 C		Rim to invert		Grade to invert		Rim to grade	Ft	
Use	Stormwater		Direction	Downstream	Flow control		Media No		
Shape	Circular		Height	18	Width	ins	Preclean Z	Date Cleaned	
Material	Reinforced Concrete Pipe		Joint length		Ft	Total length	Ft	Length Surveyed 69.50	Ft
Lining			Year laid		Year rehabilitated		Weather		
Purpose					Cat				
Additional info						Structural		O & M	Constructional
Location						Miscellaneous		Hydraulic	
Project	Carolina Crossroads					Work Order			
Northing			Easting			Elevation			
Coordinate System			GPS Accuracy						



Work Order	Setup 9		
Video	Survey Date	2020/11/16	
Path to picture files	E:\CAMERA WORK DATABASE\Snaps\CAROLNA CROSSROADS\		
Path to video files	E:\CAMERA WORK DATABASE\Movies\CAROLNA CROSSROADS\		
Path to media files	E:\CAMERA WORK DATABASE\Media\CAROLNA CROSSROADS\		



Video Index **Count** 2.0 Ft
Code [Repair Other](#)
Remarks PATCHING AT TOP WITHIN CATCH BASIN
File Name 59.jpg



Video Index **Count** 4.7 Ft
Code [Crack Longitudinal](#)
Remarks
File Name 60.jpg



Video Index **Count** 8.7 Ft
Code [Infil Stain](#)
Remarks
File Name 61.jpg



Video Index **Count** 8.7 Ft
Code [Infil Stain](#)
Remarks
File Name 62.jpg



Video Index **Count** 16.5 Ft
Code [Infil Weeper](#)
Remarks
File Name 63.jpg



Video Index **Count** 29.3 Ft
Code [Infil Stain](#)
Remarks
File Name 64.jpg



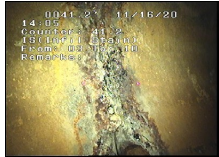
Video Index **Count** 33.4 Ft
Code [Infil Stain](#)
Remarks
File Name 65.jpg



Work Order	Setup 9		
Video	Survey Date	2020/11/16	
Path to picture files	E:\CAMERA WORK DATABASE\Snapshots\CAROLNA CROSSROADS\		
Path to video files	E:\CAMERA WORK DATABASE\Movies\CAROLNA CROSSROADS\		
Path to media files	E:\CAMERA WORK DATABASE\Media\CAROLNA CROSSROADS\		

**Video Index****Count** 37.1 Ft**Code** Infil Weeper**Remarks****File Name** 66.jpg

Work Order	Setup 9		
Video	Survey Date	2020/11/16	
Path to picture files	E:\CAMERA WORK DATABASE\Snapshots\CAROLNA CROSSROADS\		
Path to video files	E:\CAMERA WORK DATABASE\Movies\CAROLNA CROSSROADS\		
Path to media files	E:\CAMERA WORK DATABASE\Media\CAROLNA CROSSROADS\		



Video Index Count 41.2 Ft
Code Infil Stain
Remarks
File Name 67.jpg



Video Index Count 45.0 Ft
Code Infil Stain
Remarks
File Name 68.jpg



Video Index Count 49.7 Ft
Code Infil Stain
Remarks
File Name 69.jpg



Video Index Count 53.9 Ft
Code Infil Stain
Remarks
File Name 70.jpg



Video Index Count 58.3 Ft
Code Infil Stain
Remarks
File Name 71.jpg



Video Index Count 66.4 Ft
Code Joint Separated Medium
Remarks SOIL VISIBLE 12:00
File Name 72.jpg



Video Index Count 69.2 Ft
Code General Observation
Remarks LARGER SIZE PIPE AHEAD NOT WITHIN A JUNCTION
File Name 73.jpg

Tabular Report of PSR 4904 B

for HDR

Setup	9	Surveyor	GCS	Certificate #	U-0917-07009391	System Owner	SCDOT
Drainage		Survey Customer					
P/O #		Date	2020/11/16	Time	13:41	Street	I-126
City	WEST COLUMBIA	Further location details					
Up	4904 A	Rim to invert		Grade to invert		Rim to grade	Ft
Down	4904 C	Rim to invert		Grade to invert		Rim to grade	Ft
Use	Stormwater	Direction	Down	Flow control		Media No	
Shape	Circular	Height	18	Width	ins	Preclean Z	
Material	Reinforced Concrete Pipe	Joint length		Ft	Total length	Ft	Length Surveyed 69.5 Ft
Lining		Year laid		Year rehabilitated		Weather	
Purpose		Cat				Pressure	
Additional info						Structural	O & M
Location						Miscellaneous	Constructional
Project	Carolina Crossroads					Work Order	
Northing		Easting				Elevation	
Coordinate System						GPS Accuracy	

Count	Video	CD	Code	In1	In2	%	JntFr	To	ImRef	Remarks
0.0			ST Start of Survey							
0.0			ACB Catch Basin							A 4904
0.0			MWL Water Level			0				
2.0			RPZ Repair Other				J		0012	PATCHING AT TOP WITHIN CATC
4.7			CL Crack Longitudinal				J	12		
8.7			IS Infil Stain				J	03 05		
8.7			IS Infil Stain				J	07 09		
16.5			IW Infil Weeper				J	05 09		
29.3			IS Infil Stain				J	04 07		
33.4			IS Infil Stain				J	07 05		
37.1			IW Infil Weeper				J	03 07		
41.2			IS Infil Stain				J	03 10		
45.0			IS Infil Stain				J	02 07		
49.7			IS Infil Stain				J	07 09		
53.9			IS Infil Stain				J	07 09		
58.3			IS Infil Stain				J	03 09		
66.4			JSM Joint Separated Medium							SOIL VISIBLE 12:00
69.2			MGO General Observation							LARGER SIZE PIPE AHEAD NOT V
69.5			MSA Abandoned Survey							WATER LEVEL AND SEPARATED

69.5 Ft Total Length Surveyed

Scores	Structural:	Pipe Rating 3	Pipe Ratings Index 1.5	Quick Rating 2111
	O&M:	Pipe Rating 4	Pipe Ratings Index 2	Quick Rating 2200
	Overall	Pipe Rating 7	Pipe Ratings Index 3.5	Quick Rating 2311



SCA Underground
Phone:(803)730-3568

I-20/26/126 Corridor Improvement Project

EP-5001

Station 194+70

18-inch RCP

Client: SCDOT

Mead & Hunt Project Number: 114295.02

Phase: Drainage

Video Pipe Inspections

Summary:

Mead & Hunt, Inc. assessed the overall condition of an 18-inch reinforced concrete pipe as illustrated on sheet number 23 of the provided plan sheets for I-126.

Objective:

The inspections are to assess the overall condition of each box culvert. Each culverts dimension will be measured for comparison to the current plans. Deficiencies to be noted include cracks, spalling, cave-ins, debris build-up, sediment build-up, etc. Each box culvert is to be recorded on video, from end to end, to display any deficiencies within the culvert.

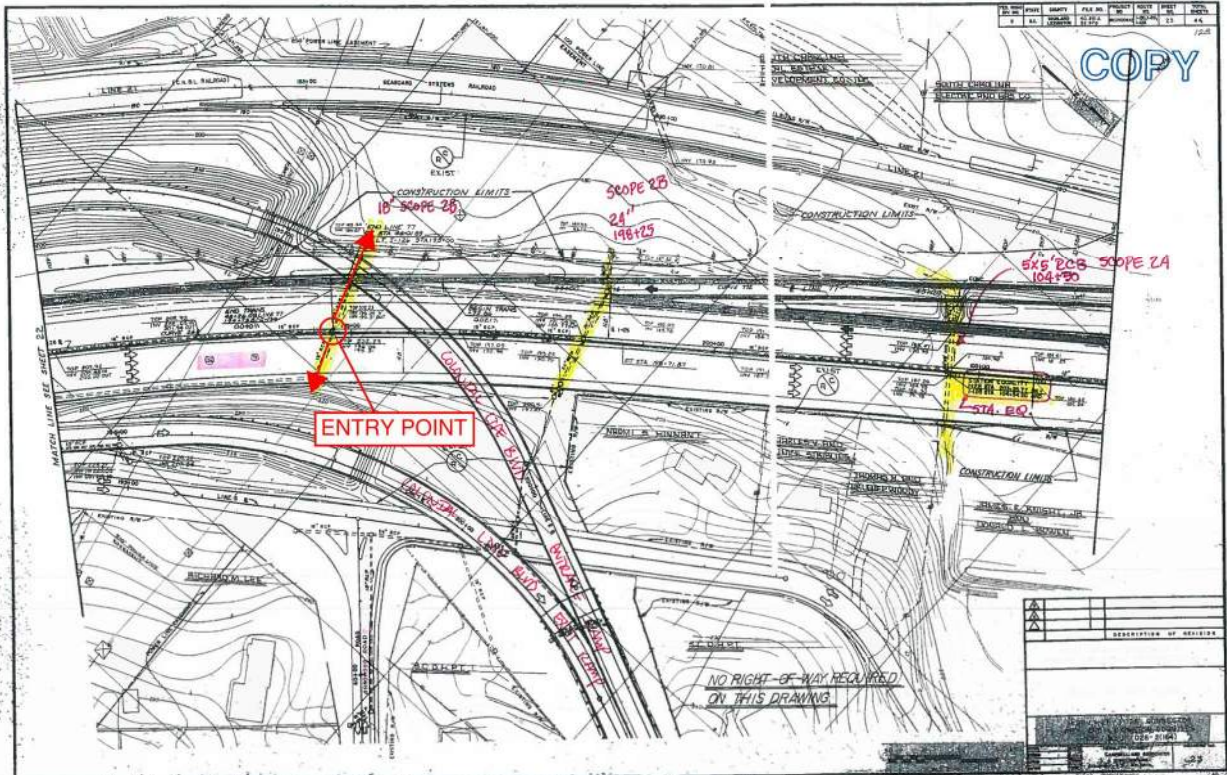
I-126 Station 194+70

- Dimensions: Verified 18-inch RCP, Approximately 200 LF
- Observations
 1. Joint at approximately 122-feet (North of entry)-severe joint separation, soil exposed between pipes.
 2. Joint at approximately 58-feet (South of entry)-severe joint separation causing blockage that prevents drain from functioning, pipe is beginning to collapse.

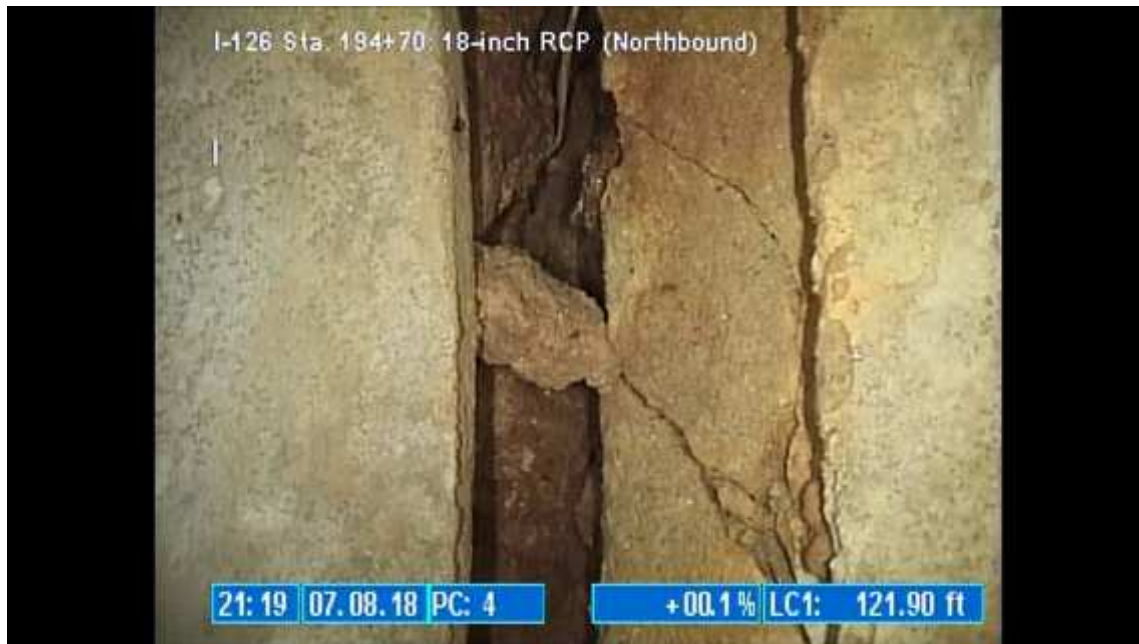
General note: Mineral buildup in joints indicating that the joints are not sealed properly.

- Recommendations
 1. Slipline or replace existing pipe.

EP-5001



1.





EP-5002 A-B

Project Information

Surveyor Name	GCS	Certificate Number	U-0917-07009391
Owner		Customer	
Drainage Area		PO Number	
Pipe Segment Reference	PIPE 5002	Date	10/30/2020 13:04
Street	I-26	City	COLUMBIA
Comments			

Manhole

Upstream MH	5002 B	Rim to Invert (U)	
Grade to Invert (U)		Rim to Grade (U)	
Downstream MH	5002 A	Rim to Invert (D)	
Grade to Invert (D)		Rim to Grade (D)	
Pipe Use	Stormwater Pipe	Direction of Survey	Upstream

Pipe

Height (Diameter)	18	Width	
Shape	Circular	Material	Reinforced Concrete Pipe
Lining Method		Pipe Joint Length	
Total Length	71	Length Surveyed	71
Year Constructed		Year Renewed	

Misc

Flow Control		Media Label	DVD
Purpose		Consequence of Failure	
Pre-Cleaning	No Pre-Cleaning	Date Cleaned	
Weather		Location Code	
Additional Info		Location Details	

Custom

Custom 1	Custom 2
Custom 3	Custom 4
Custom 5	Custom 6
Custom 7	Custom 8
Custom 9	Custom 10




Project			
Reverse Setup ID		Sheet (Group) Number	EP-5002 A-B
Imperial Units (US)	True	Pressure Value	
Work Order		Project	CAROLINA CROSSROADS

Coating Method		Completed	Yes
Insp Tech Used			
CCTV	Yes	Laser	No
Sidewall	No	Sonar	No
Zoom	No	Other	No

Inspection			
Inspection Status	Complete Inspection	Reviewer Certificate Number	
Reviewed By			

Count Groups			
Taps	0	Roots	8
Cracks / Fractures	0	Broken / Holes / Collapse	0
Deposits	0	Obstruction	2
Abandoned Survey	0		

Project: CAROLINA CROSSROADS	
Date: 10/30/2020 1:04:00 PM	Pipe Segment Reference: PIPE 5002
Street: I-26	Upstream MH: 5002 B
Length Surveyed: 71	Downstream MH: 5002 A
Run Number:	Direction of Survey: Upstream
Height (Diameter): 18	Material: Reinforced Concrete Pipe

Distance	Fault Observation	Time	Picture
0.0	Access Point Discharge Point Severity: None Remarks: 5002 A	14	
0.0	Miscellaneous Water Level Severity: None Percent: 0	28	
7.7	Roots Fine Joint Position: 9 To 4 Severity: None Joint Maint Weight: 1	01:15	

Distance	Fault Observation	Time	Picture
15.7	Roots Fine Joint Position: 7 To 4 Severity: None Joint Maint Weight: 1	02:03	
15.7	Obstruction Other Position: 5 To 7 Severity: None Cont Defect: S01 Percent: 10 Remarks: DIRT IN PIPE Maint Weight: 2	02:39	
23.8	Roots Fine Joint Position: 7 To 5 Severity: None Joint Maint Weight: 1	03:13	


EP-5002 A-B

Distance	Fault Observation	Time	Picture
29.8	Obstruction Other Position: 5 To 7 Severity: None Cont Defect: F01 Percent: 10 Remarks: DIRT IN PIPE Maint Weight: 2	03:47	
30.3	Roots Medium Joint Position: 5 To 7 Severity: None Percent: 10 Joint Maint Weight: 3	04:15	
31.4	Roots Fine Joint Position: 8 To 3 Severity: None Joint Maint Weight: 1	04:43	

EP-5002 A-B

Distance	Fault Observation	Time	Picture
40.0	Roots Fine Joint Position: 2 To 8 Severity: None Joint Maint Weight: 1	05:58	
48.0	Roots Fine Joint Position: 7 To 12 Severity: None Joint Maint Weight: 1	06:58	
55.8	Roots Fine Joint Position: 6 To 9 Severity: None Joint Maint Weight: 1	08:06	

EP-5002 A-B

Distance	Fault Observation	Time	Picture
71.0	Access Point Catch Basin Severity: None Remarks: 5002 B	10:33	 <p> CAPTAIN'S ROAD From 5002 B To 5002 B ACB 5002 B Front Cat ch B 5002 B </p> <p> 10,30,20 84/-91' +70,9ft </p>

Created with the  report generator

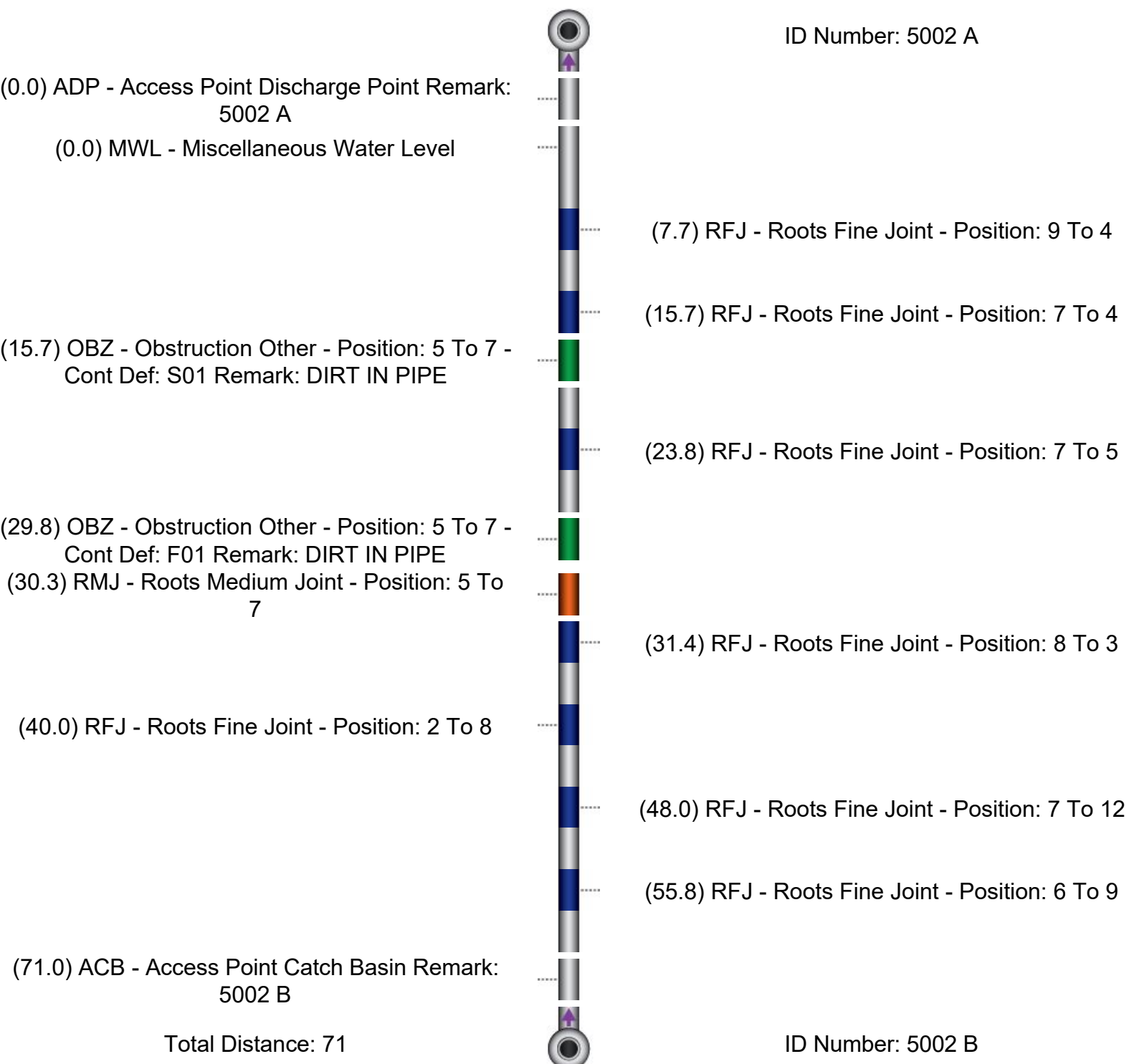
EP-5002 A-B



EP-5002 A-B

Project: CAROLINA CROSSROADS	
Date: 10/30/2020 1:04:00 PM	Pipe Segment Reference: PIPE 5002
Street: I-26	Upstream MH: 5002 B
Length Surveyed: 71	Downstream MH: 5002 A
Run Number:	Direction of Survey: Upstream
Height (Diameter): 18	Material: Reinforced Concrete Pipe

Severity
Light-1
Moderate-2
Average-3
Heavy-4
Severe-5



Nassco C.C.T.V. Defect Code Information

Grade	Structural	O&M	Overall
5	0	0	0
4	0	0	0
3	0	3	3
2	0	6	6
1	0	7	7
Overall	0	16	16
Number of Defects	0	11	11
Pipe Rating	0000	3123	3123
Pipe Ratings Index	0	1.5	1.5

Nassco C.C.T.V. Defect Code Information

EP-5002 A-B

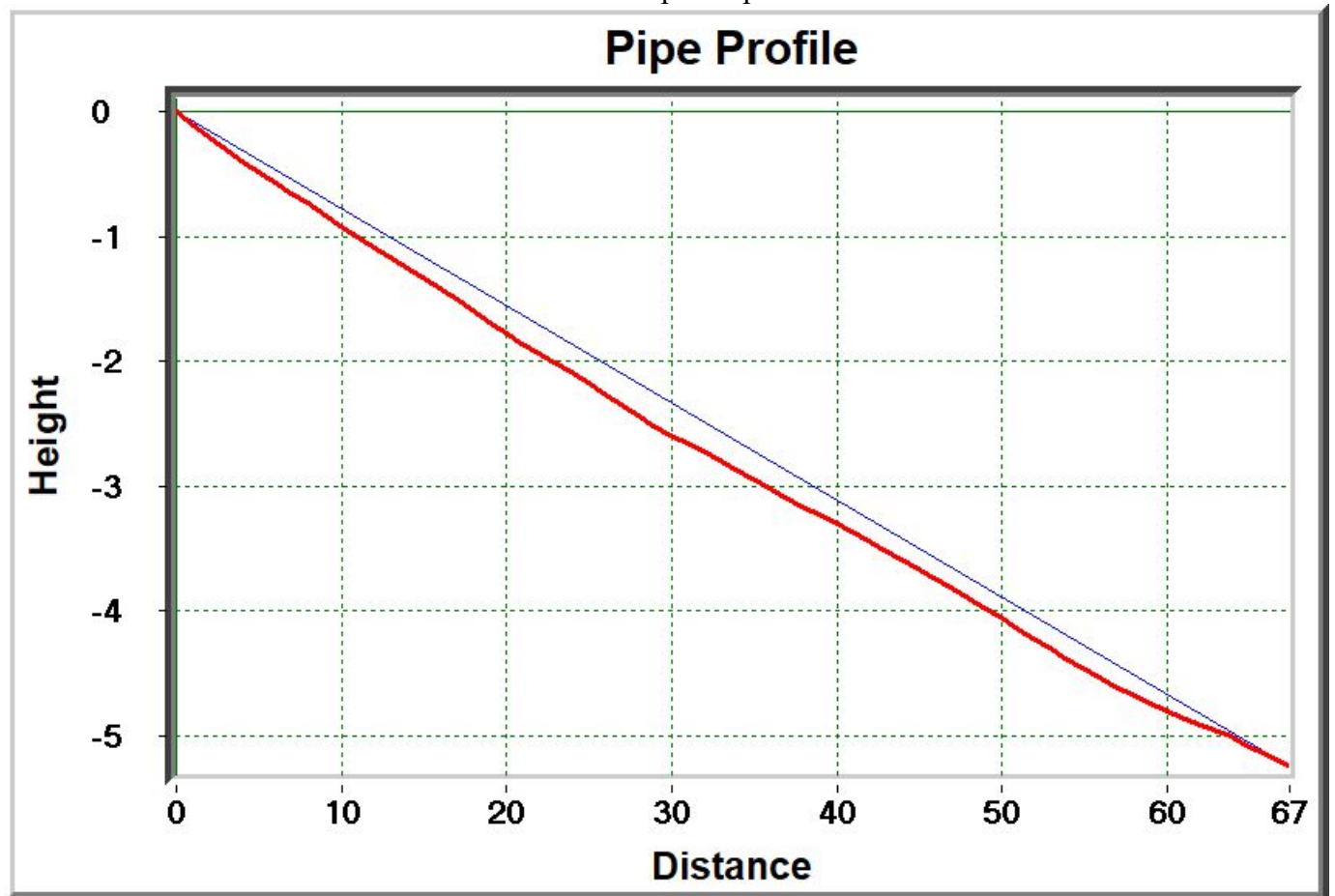
EP-5002 A-B

Distance	Video Ref	Code	Cont Defect	Value			Joint	Circumferential Location	
				Dimension		%		At / From	To
				1st	2nd				
0	14	ADP - Access Point Discharge Point							
		5002 A							
0	28	MWL - Miscellaneous Water Level				0			
7.7	75	RFJ - Roots Fine Joint					X	9	4
15.7	123	RFJ - Roots Fine Joint					X	7	4
15.7	159	OBZ - Obstruction Other	S01			10		5	7
		DIRT IN PIPE							
23.8	193	RFJ - Roots Fine Joint					X	7	5
29.8	227	OBZ - Obstruction Other	F01			10		5	7
		DIRT IN PIPE							
30.3	255	RMJ - Roots Medium Joint				10	X	5	7
31.4	283	RFJ - Roots Fine Joint					X	8	3
40	358	RFJ - Roots Fine Joint					X	2	8
48	418	RFJ - Roots Fine Joint					X	7	12
55.8	486	RFJ - Roots Fine Joint					X	6	9
71	633	ACB - Access Point Catch Basin							
		5002 B							

Project: CAROLINA CROSSROADS	
Date: 10/30/2020 1:04:00 PM	Pipe Segment Reference: PIPE 5002
Street: I-26	Upstream MH: 5002 B
Length Surveyed: 71	Downstream MH: 5002 A
Run Number:	Direction of Survey: Upstream
Height (Diameter): 18	Material: Reinforced Concrete Pipe

Percent Grade Mean: -7.77
 Plot Distance From: 0 To 72
 Max Percent Difference: 3
 Number of Window Values: 1
 Percent Difference Max for Windows Values: 60
 Number of Feet to Average: 1
 Final number of points plotted: 64

EP-5002 A-B





EP-5002 B-C

Project Information

Surveyor Name	GCS	Certificate Number	U-0917-07009391
Owner		Customer	
Drainage Area		PO Number	
Pipe Segment Reference	PIPE 5002	Date	10/30/2020 13:19
Street	I-26	City	COLUMBIA
Comments			

Manhole

Upstream MH	5002 C	Rim to Invert (U)	
Grade to Invert (U)		Rim to Grade (U)	
Downstream MH	5002 B	Rim to Invert (D)	
Grade to Invert (D)		Rim to Grade (D)	
Pipe Use	Stormwater Pipe	Direction of Survey	Upstream

Pipe

Height (Diameter)	18	Width	
Shape	Circular	Material	Reinforced Concrete Pipe
Lining Method		Pipe Joint Length	
Total Length	55.9	Length Surveyed	55.9
Year Constructed		Year Renewed	

Misc

Flow Control		Media Label	DVD
Purpose		Consequence of Failure	
Pre-Cleaning	No Pre-Cleaning	Date Cleaned	
Weather		Location Code	
Additional Info		Location Details	

Custom

Custom 1	Custom 2
Custom 3	Custom 4
Custom 5	Custom 6
Custom 7	Custom 8
Custom 9	Custom 10

Project			
Reverse Setup ID		Sheet (Group) Number	
Imperial Units (US)		Pressure Value	
Work Order		Project	
		CAROLINA CROSSROADS	


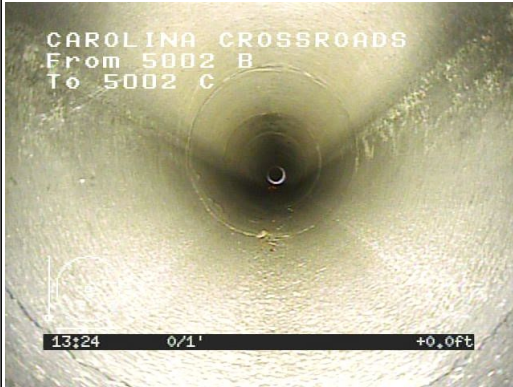

EP-5002 B-C

Coating Method		Completed	
		Yes	
Insp Tech Used			
CCTV	Yes	Laser	No
Sidewall	No	Sonar	No
Zoom	No	Other	No

Inspection	
Inspection Status	Complete Inspection
Reviewed By	Reviewer Certificate Number

Count Groups			
Taps	0	Roots	1
Cracks / Fractures	0	Broken / Holes / Collapse	0
Deposits	0	Obstruction	0
Abandoned Survey	0		

Project: CAROLINA CROSSROADS	
Date: 10/30/2020 1:19:00 PM	Pipe Segment Reference: PIPE 5002
Street: I-26	Upstream MH: 5002 C
Length Surveyed: 55.9	Downstream MH: 5002 B
Run Number:	Direction of Survey: Upstream
Height (Diameter): 18	Material: Reinforced Concrete Pipe

Distance	Fault Observation	Time	Picture
0.0	Access Point Catch Basin Severity: None Remarks: 5002 B	16	
0.0	Miscellaneous Water Level Severity: None Percent: 0	31	
1.0	Roots Fine Joint Position: 5 To 7 Severity: None Joint Maint Weight: 1	01:33	

Distance	Fault Observation	Time	Picture
9.4	Miscellaneous General Observation Severity: None Remarks: OBSERVATION CHIPPED SPIGOT 1.319	03:42	
55.9	Access Point Catch Basin Severity: None Remarks: 5002 C	11:21	

Created with the  report generator

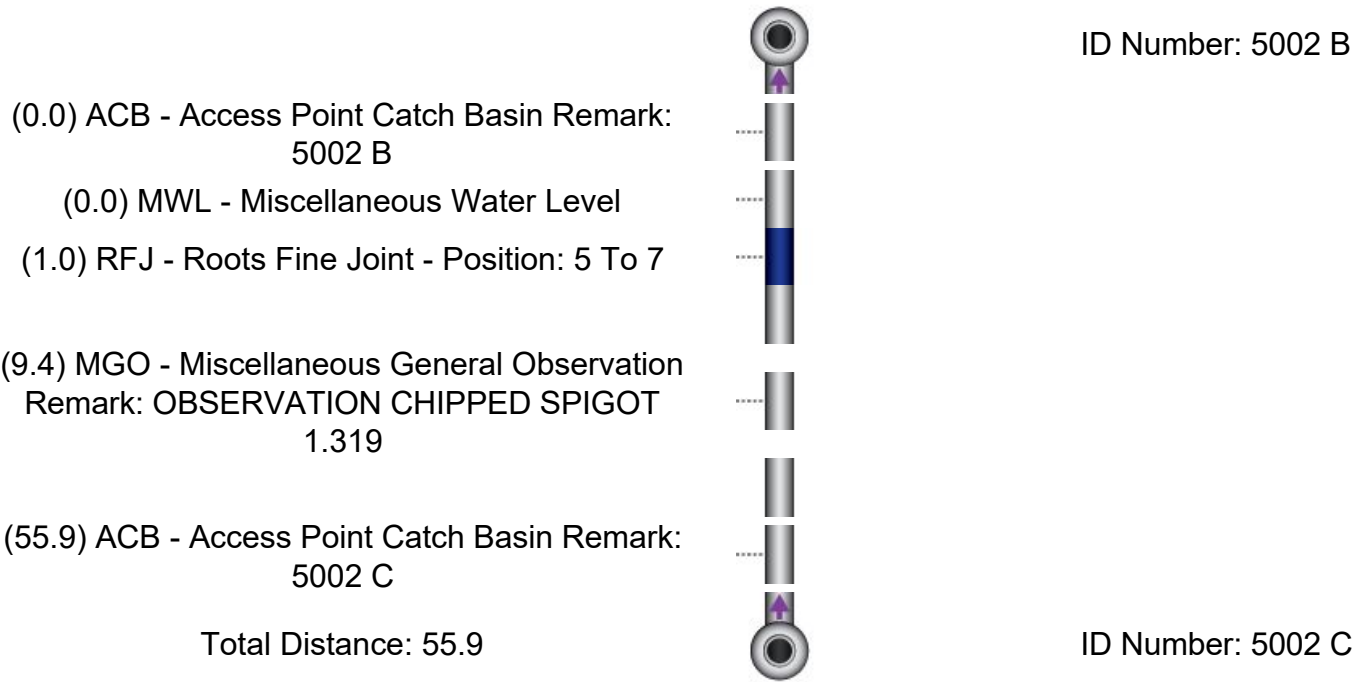
EP-5002 B-C



EP-5002 B-C

Project: CAROLINA CROSSROADS	
Date: 10/30/2020 1:19:00 PM	Pipe Segment Reference: PIPE 5002
Street: I-26	Upstream MH: 5002 C
Length Surveyed: 55.9	Downstream MH: 5002 B
Run Number:	Direction of Survey: Upstream
Height (Diameter): 18	Material: Reinforced Concrete Pipe

Severity
Light-1
Moderate-2
Average-3
Heavy-4
Severe-5



Nassco C.C.T.V. Defect Code Information

Grade	Structural	O&M	Overall
5	0	0	0
4	0	0	0
3	0	0	0
2	0	0	0
1	0	1	1
Overall	0	1	1
Number of Defects	0	1	1
Pipe Rating	0000	1100	1100
Pipe Ratings Index	0	1	1

Nassco C.C.T.V. Defect Code Information

EP-5002 B-C

Distance	Video Ref	Code	Cont Defect	Value			Joint	Circumferential Location	
				Dimension		%		At / From	To
				1st	2nd				
0	16	ACB - Access Point Catch Basin							
		5002 B							
0	31	MWL - Miscellaneous Water Level				0			
1	93	RFJ - Roots Fine Joint					X	5	7
9.4	222	MGO - Miscellaneous General Observation							
		OBSERVATION CHIPPED SPIGOT 1.319							
55.9	681	ACB - Access Point Catch Basin							
		5002 C							

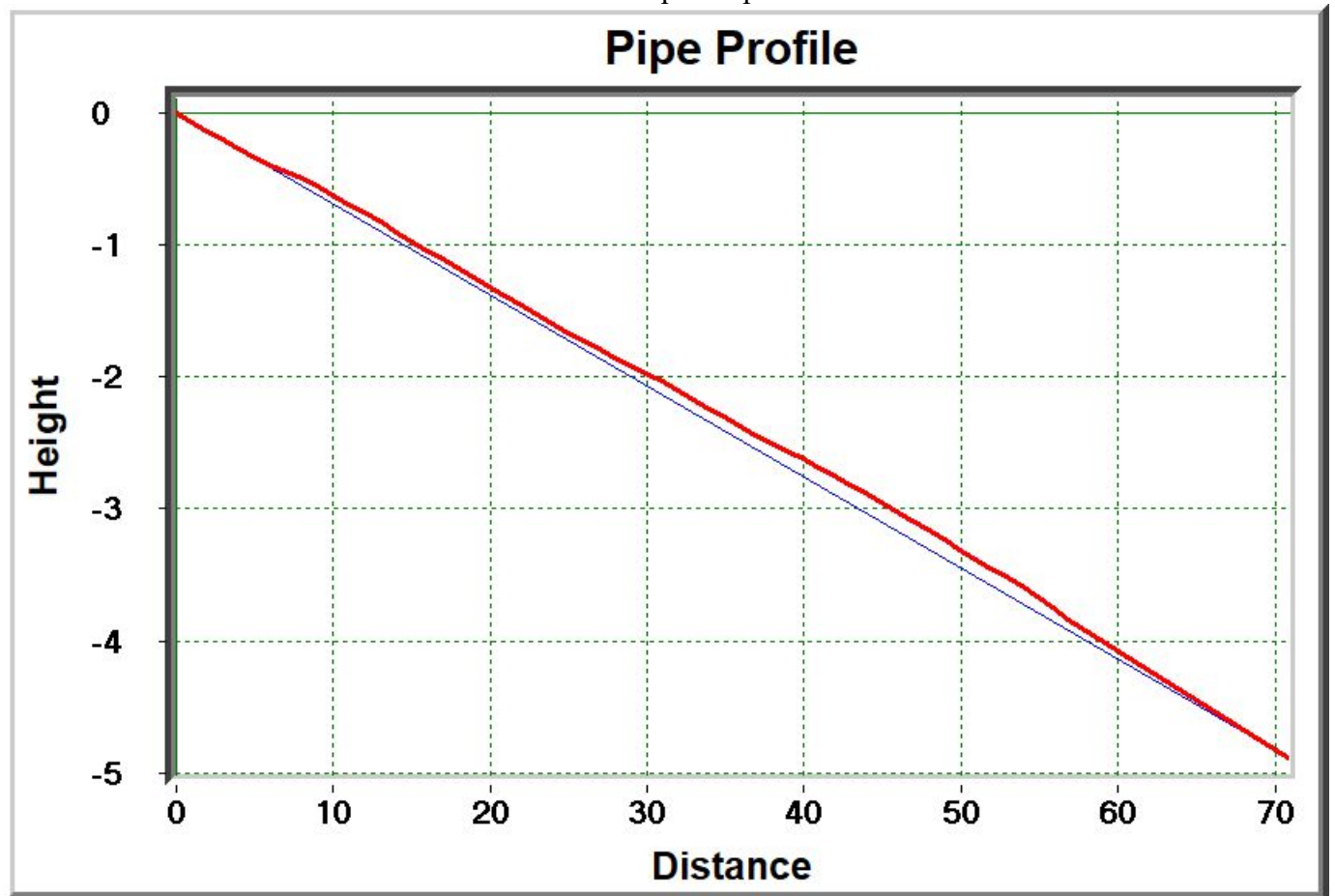
Created with the  report generator

EP-5002 B-C

Project: CAROLINA CROSSROADS	
Date: 10/30/2020 1:19:00 PM	Pipe Segment Reference: PIPE 5002
Street: I-26	Upstream MH: 5002 C
Length Surveyed: 55.9	Downstream MH: 5002 B
Run Number:	Direction of Survey: Upstream
Height (Diameter): 18	Material: Reinforced Concrete Pipe

Percent Grade Mean: -6.77
 Plot Distance From: 0 To 57
 Max Percent Difference: 3
 Number of Window Values: 1
 Percent Difference Max for Windows Values: 60
 Number of Feet to Average: 1
 Final number of points plotted: 58

EP-5002 B-C





EP-5002 C-D

Project Information

Surveyor Name	GCS	Certificate Number	U-0917-07009391
Owner		Customer	
Drainage Area		PO Number	
Pipe Segment Reference	PIPE 5002	Date	10/30/2020 13:32
Street	I-26	City	COLUMBIA
Comments			

Manhole

Upstream MH	5002 D	Rim to Invert (U)	
Grade to Invert (U)		Rim to Grade (U)	
Downstream MH	5002 C	Rim to Invert (D)	
Grade to Invert (D)		Rim to Grade (D)	
Pipe Use	Stormwater Pipe	Direction of Survey	Upstream

Pipe

Height (Diameter)	18	Width	
Shape	Circular	Material	Reinforced Concrete Pipe
Lining Method		Pipe Joint Length	
Total Length	55.5	Length Surveyed	55.5
Year Constructed		Year Renewed	

Misc

Flow Control		Media Label	DVD
Purpose		Consequence of Failure	
Pre-Cleaning	No Pre-Cleaning	Date Cleaned	
Weather		Location Code	
Additional Info		Location Details	

Custom

Custom 1	Custom 2
Custom 3	Custom 4
Custom 5	Custom 6
Custom 7	Custom 8
Custom 9	Custom 10

Project			
Reverse Setup ID		Sheet (Group) Number	
Imperial Units (US)	True	Pressure Value	
Work Order		Project	
		CAROLINA CROSSROADS	

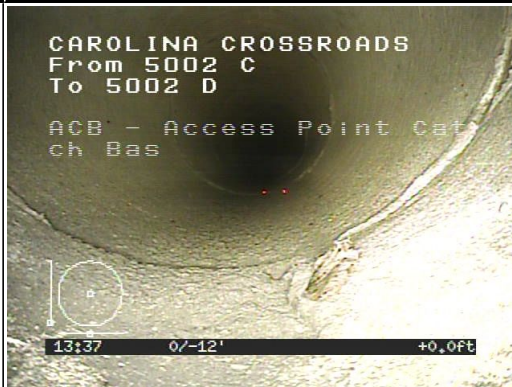

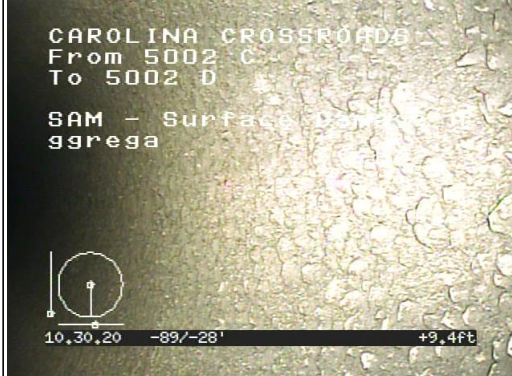
EP-5002 C-D

Coating Method		Completed	
		No	
Insp Tech Used			
CCTV	Yes	Laser	No
Sidewall	No	Sonar	No
Zoom	No	Other	No

Inspection	
Inspection Status	Complete Inspection
Reviewed By	Reviewer Certificate Number

Count Groups			
Taps	0	Roots	0
Cracks / Fractures	0	Broken / Holes / Collapse	0
Deposits	0	Obstruction	0
Abandoned Survey	1		

Project: CAROLINA CROSSROADS	
Date: 10/30/2020 1:32:00 PM	Pipe Segment Reference: PIPE 5002
Street: I-26	Upstream MH: 5002 D
Length Surveyed: 55.5	Downstream MH: 5002 C
Run Number:	Direction of Survey: Upstream
Height (Diameter): 18	Material: Reinforced Concrete Pipe

Distance	Fault Observation	Time	Picture
0.0	Access Point Catch Basin Severity: None Remarks: 5002 C	14	
0.0	Miscellaneous Water Level Severity: None Percent: 0	29	
9.4	Surface Damage Aggregate Missing Position: 5 To 7 Severity: None Cont Defect: S01 Remarks: FLOOR HAS SOME EROSION Struct Weight: 4	02:50	

Distance	Fault Observation	Time	Picture
53.3	Intruding Sealing Material Sealing Ring Position: 12 To 2 Severity: None Percent: 5 Remarks: TAR VISIBLE Maint Weight: 2	10:44	<p>CAROLINA CROSSROADS From 5002 C To 5002 D</p> <p>13:50 68/-83' +53.3ft</p>
53.3	Miscellaneous General Observation Severity: None Remarks: GAP OBSERVATION 1.374	11:22	<p>CAROLINA CROSSROADS From 5002 C To 5002 D</p> <p>10,30,20 27/-83' +53.3ft</p>
55.5	Line Left Severity: None Percent: 70 Remarks: LINE TURNS 50 DEGREES LEFT Maint Weight: 4	13:37	<p>CAROLINA CROSSROADS From 5002 C To 5002 D</p> <p>GAP OBSERVATION 1.374</p> <p>10,30,20 0/-82' +55.5ft</p>

EP-5002 C-D

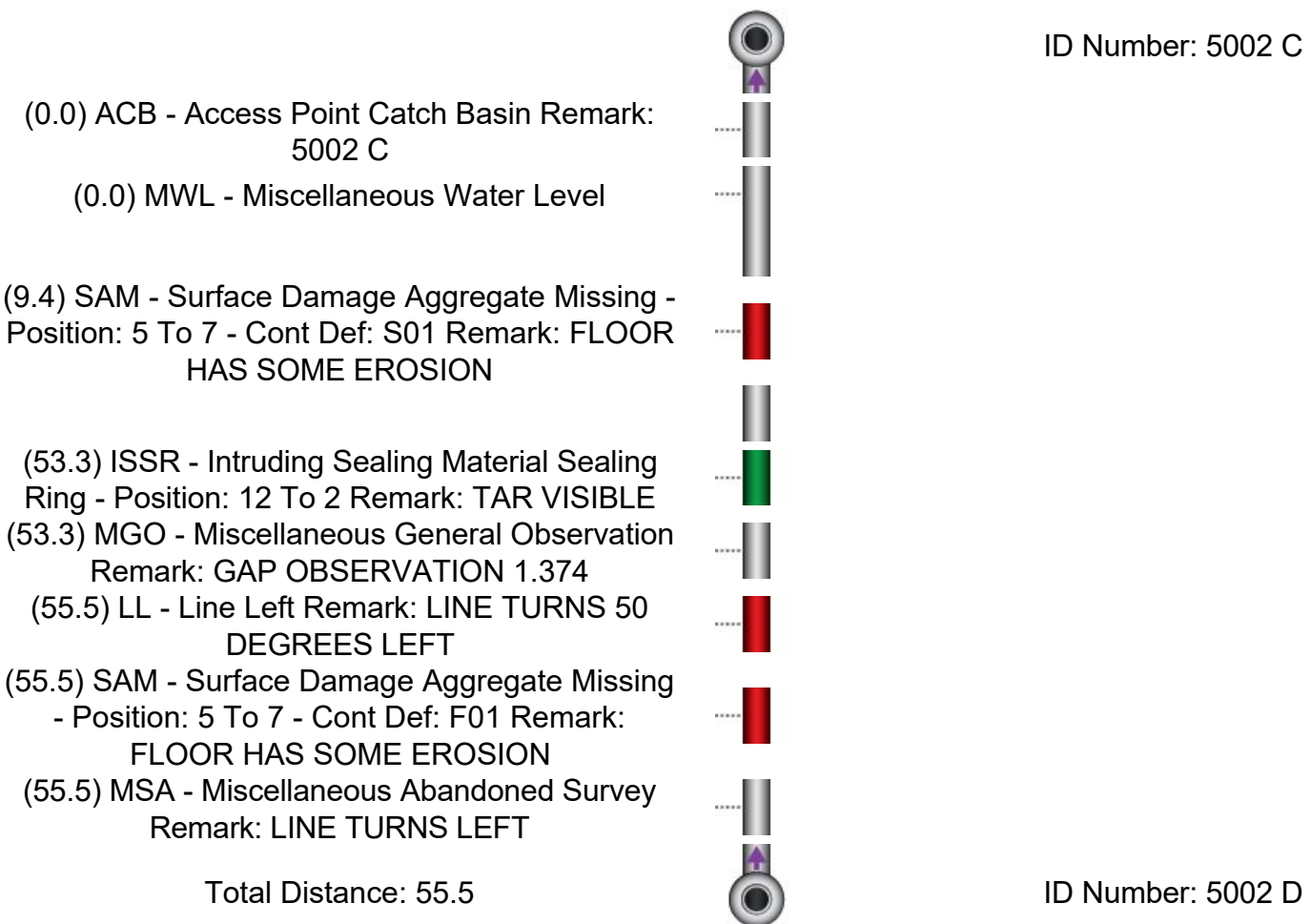
Distance	Fault Observation	Time	Picture
55.5	Surface Damage Aggregate Missing Position: 5 To 7 Severity: None Cont Defect: F01 Remarks: FLOOR HAS SOME EROSION Struct Weight: 4	15:32	
55.5	Miscellaneous Abandoned Survey Severity: None Remarks: LINE TURNS LEFT	16:01	

Created with the  report generator

EP-5002 C-D

Project: CAROLINA CROSSROADS	
Date: 10/30/2020 1:32:00 PM	Pipe Segment Reference: PIPE 5002
Street: I-26	Upstream MH: 5002 D
Length Surveyed: 55.5	Downstream MH: 5002 C
Run Number:	Direction of Survey: Upstream
Height (Diameter): 18	Material: Reinforced Concrete Pipe

Severity
Light-1
Moderate-2
Average-3
Heavy-4
Severe-5



Nassco C.C.T.V. Defect Code Information

Grade	Structural	O&M	Overall
5	0	0	0
4	36	4	40
3	0	0	0
2	0	2	2
1	0	0	0
Overall	36	6	42
Number of Defects	9	2	11
Pipe Rating	4900	4121	4A21
Pipe Ratings Index	4	3	3.8

Nassco C.C.T.V. Defect Code Information

EP-5002 C-D

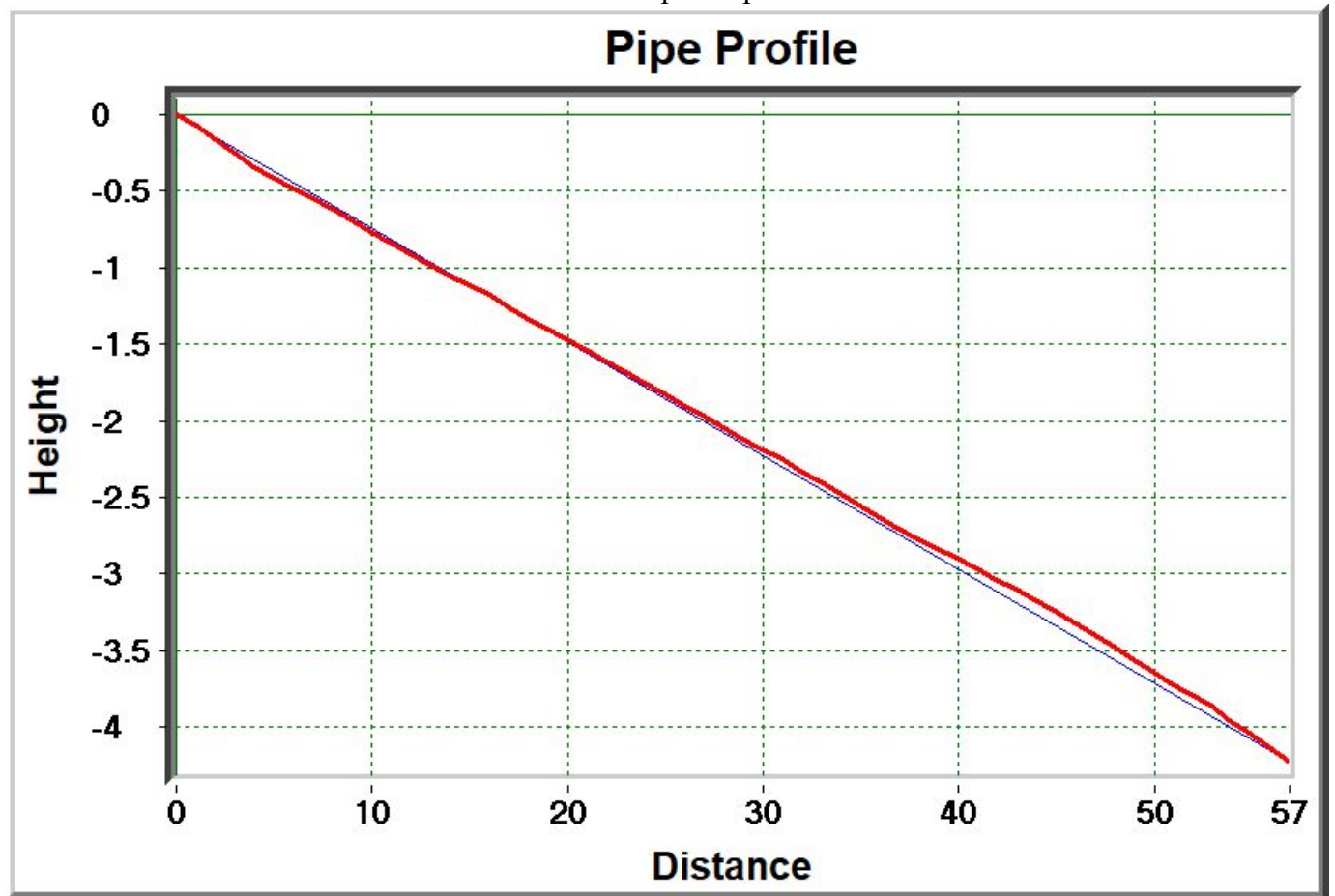
EP-5002 C-D

Distance	Video Ref	Code	Cont Defect	Value			Joint	Circumferential Location	
				Dimension		%		At / From	To
				1st	2nd				
0	14	ACB - Access Point Catch Basin							
		5002 C							
0	29	MWL - Miscellaneous Water Level				0			
9.4	170	SAM - Surface Damage Aggregate Missing	S01					5	7
		FLOOR HAS SOME EROSION							
53.3	644	ISSR - Intruding Sealing Material Sealing Ring				5		12	2
		TAR VISIBLE							
53.3	682	MGO - Miscellaneous General Observation							
		GAP OBSERVATION 1.374							
55.5	817	LL - Line Left				70			
		LINE TURNS 50 DEGREES LEFT							
55.5	932	SAM - Surface Damage Aggregate Missing	F01					5	7
		FLOOR HAS SOME EROSION							
55.5	961	MSA - Miscellaneous Abandoned Survey							
		LINE TURNS LEFT							

Project: CAROLINA CROSSROADS	
Date: 10/30/2020 1:32:00 PM	Pipe Segment Reference: PIPE 5002
Street: I-26	Upstream MH: 5002 D
Length Surveyed: 55.5	Downstream MH: 5002 C
Run Number:	Direction of Survey: Upstream
Height (Diameter): 18	Material: Reinforced Concrete Pipe

Percent Grade Mean: -7.42
 Plot Distance From: 0 To 57
 Max Percent Difference: 3
 Number of Window Values: 1
 Percent Difference Max for Windows Values: 60
 Number of Feet to Average: 1
 Final number of points plotted: 57

EP-5002 C-D



I-20/26/126 Corridor Improvement Project

EP-5002

Station 181+90

18-inch RCP

Client: SCDOT

Mead & Hunt Project Number: 114295.02

Phase: Drainage

Video Pipe Inspections

Summary:

Mead & Hunt, Inc. assessed the overall condition of an 18-inch reinforced concrete pipe as illustrated on sheet number 22 of the provided plan sheets for I-126.

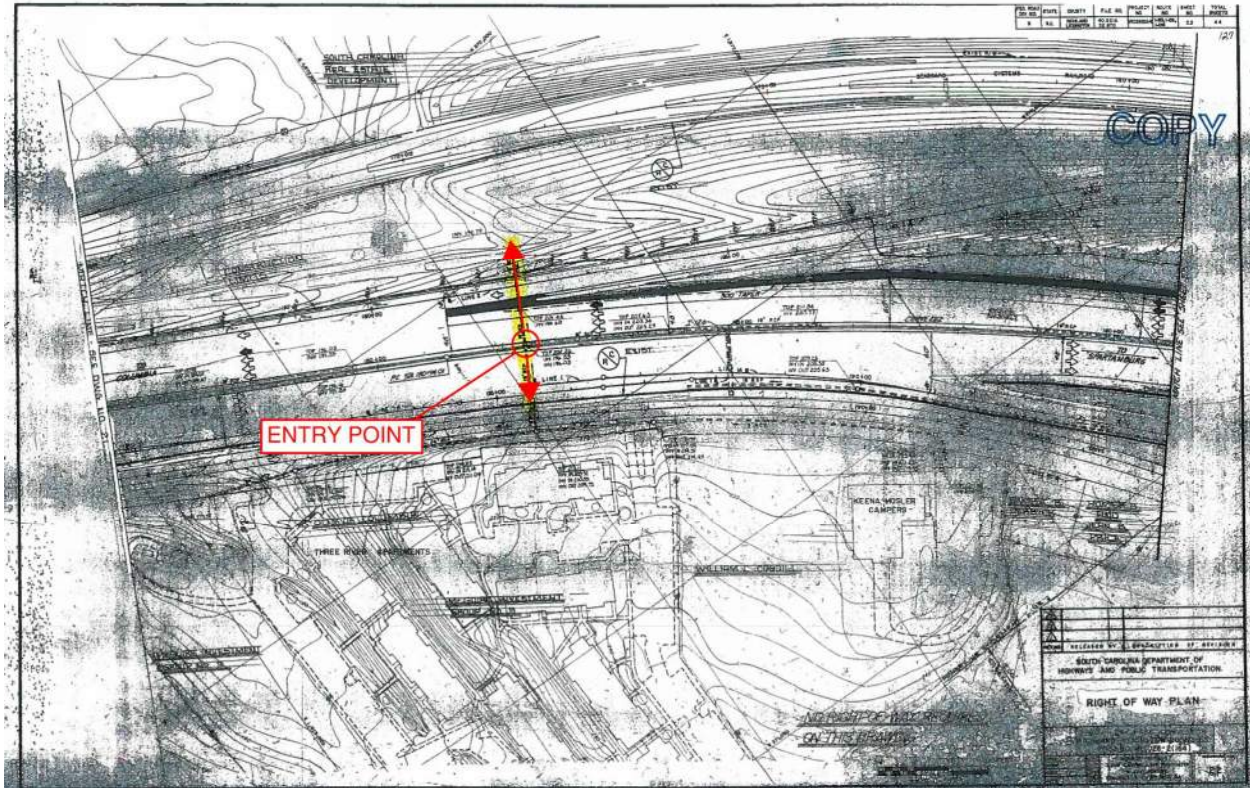
Objective:

The inspections are to assess the overall condition of each box culvert. Each culverts dimension will be measured for comparison to the current plans. Deficiencies to be noted include cracks, spalling, cave-ins, debris build-up, sediment build-up, etc. Each box culvert is to be recorded on video, from end to end, to display any deficiencies within the culvert.

I-126 Station 181+90

- Dimensions: Verified 18-inch RCP, Approximately 200 LF
- Observations
 1. North end of pipe appears to be blocked at entrance prohibiting water flow. Clean pipe in order to fix this issue.
- Recommendations
 1. Clean pipe.

EP-5002



1.



EP-5002



I-20/I-26/I-126 Corridor Improvement Project

Alignment 126P, Station 58+25

Structure EC-5101

8' x 6' RCBC

Summary:

F&ME assessed the overall condition of an 8' x 6' RCBC designated as EC-5101. Culvert changed section to a 5' x 5' RCBC 161 feet from the outfall.

Observations:

- Dimensions – From the outfall 161 LF to the inlet, the culvert was verified as an 8' x 6' RCBC. Past that point to the inlet, the culvert was measured as a 5' x 5' RCBC. Measured length of 483 LF; plan length of 385 LF.
- Scan direction – Outfall to inlet.
- General notes – None
- Observations:
 - 1) 44 feet – Transverse cracking on left and right sides of culvert.
 - 2) 50 feet – Transverse cracking on left and right sides of culvert; soil infiltration from lifting holes.
 - 3) 55 feet – Transverse cracking on right side of culvert.
 - 4) 63 feet – Transverse cracking on right side of culvert.
 - 5) 69 feet – Transverse cracking on right side of culvert.
 - 6) 73 feet – Transverse cracking on right side of culvert.
 - 7) 78 feet – Transverse cracking on right side of culvert.
 - 8) 85 feet – 18" RCP cracking at tie interface.
 - 9) 95 feet – Transverse cracking on right side of culvert.
 - 10) 110 feet – Transverse cracking on right side of culvert.
 - 11) 113 feet – Transverse cracking on left side of culvert.
 - 12) 136 feet – Transverse cracking on left side of culvert.
 - 13) 140 feet – Transverse cracking on right side of culvert.

Transition point to 5' x 5' RCBC. All distances are from transition point.

- 14) 23 feet – Transverse cracking on left side of culvert.
- 15) 32 feet – Transverse cracking on right side of culvert.
- 16) 79.5 feet – 0.20" separation at joint.
- 17) 94 feet – Spalled concrete and exposed rebar on left side
- 18) 98 feet – Transverse cracking on left side and top of culvert.
- 19) 100 feet – Transverse crack on right side of culvert.
- 20) 114 feet – Transverse crack on right, left, and top sides of culvert.
- 21) 139.5 feet – Separation at joint; infiltration weeping.
- 22) 143 feet – Transverse crack on right side of culvert.
- 23) 163 feet – Transverse crack on right, left, and top sides of culvert.

I-20/I-26/I-126 Corridor Improvement Project

Alignment 126P, Station 58+25

Structure EC-5101

EC-5101

8' x 6' RCBC

Summary:

F&ME assessed the overall condition of an 8' x 6' RCBC designated as EC-5101. Culvert changed section to a 5' x 5' RCBC 161 feet from the outfall.

Observations:

- Dimensions – From the outfall 161 LF to the inlet, the culvert was verified as an 8' x 6' RCBC. Past that point to the inlet, the culvert was measured as a 5' x 5' RCBC. Measured length of 483 LF; plan length of 385 LF.
- Scan direction – Outfall to inlet.
- General notes – None
- Observations:
 - 24) 200 feet – Transverse crack on right, left, and top sides of culvert.
 - 25) 228 feet – Transverse crack on left side of culvert.
 - 26) 259 feet – Separation at joint.
 - 27) 313 feet – Transverse crack on left side of culvert.



44' – Lt side
Transverse cracking



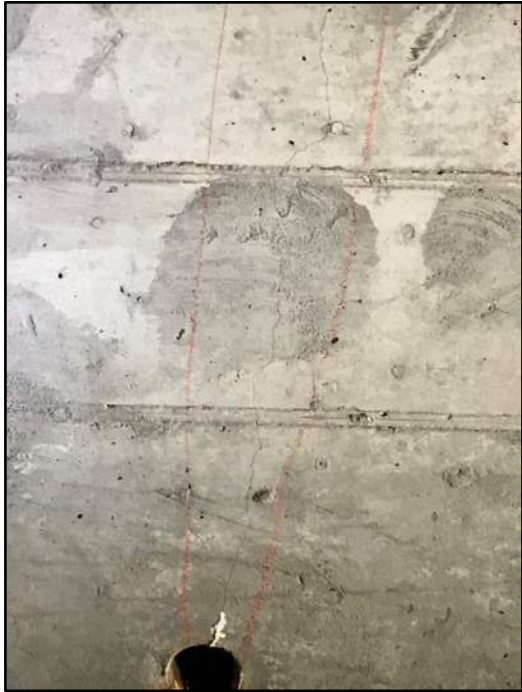
44' – Lt side
Transverse cracking



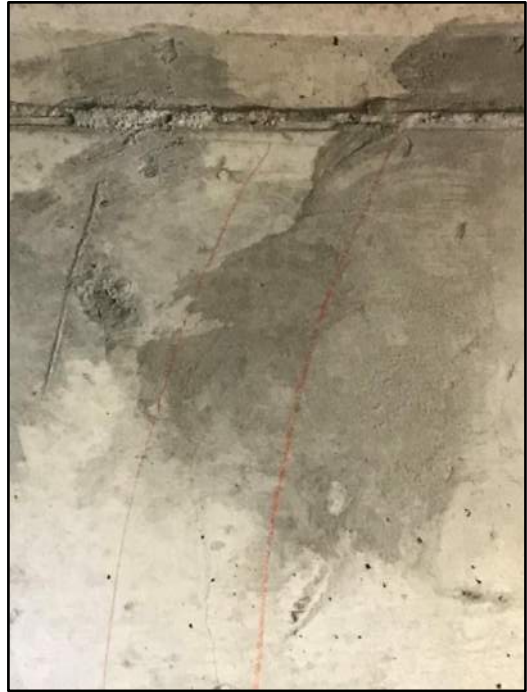
44' – Lt side
Transverse cracking



44' – Rt side
Transverse cracking



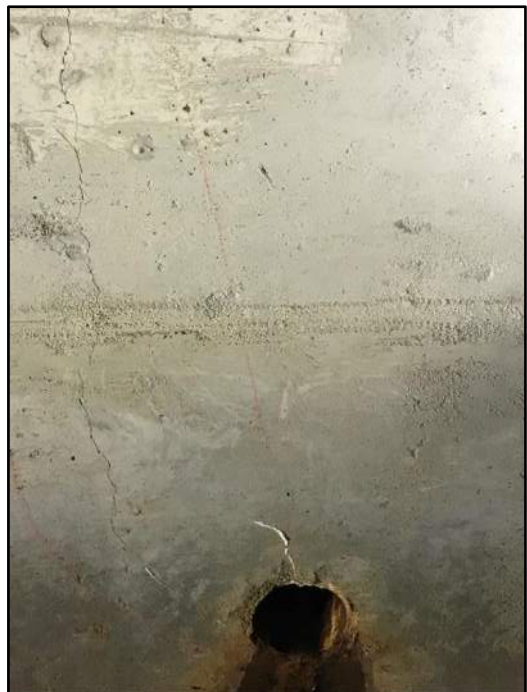
44' – Rt side
Transverse cracking



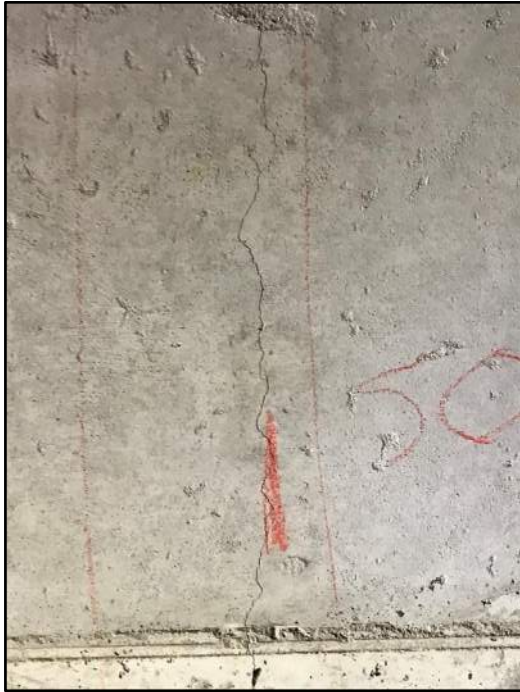
44' – Rt side
Transverse cracking



44' – Rt side
Transverse cracking



44' – Rt side
Transverse cracking



50' – Lt side
Transverse cracking



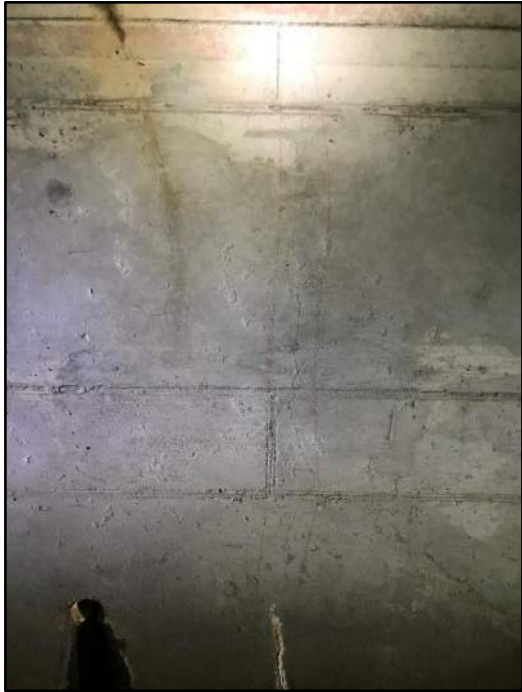
50' – Lt side
Transverse cracking



50' – Lt side
Transverse cracking



50' – Lt side
Transverse cracking



50' – Rt side
Transverse cracking



50' – Rt side
Transverse cracking



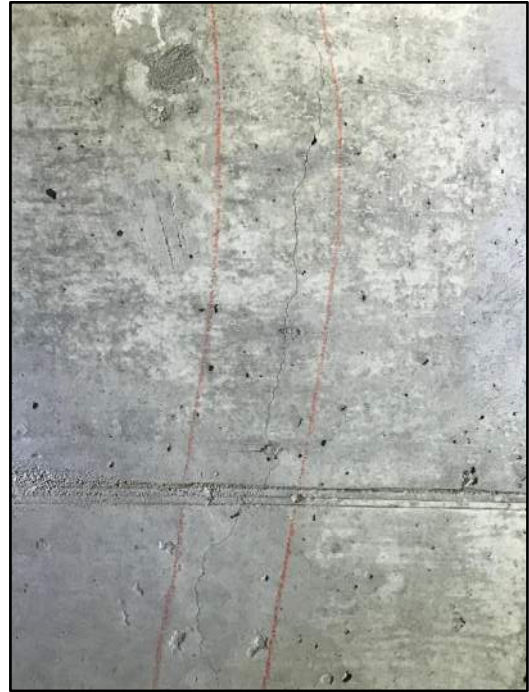
50' – Rt side
Transverse cracking



50' – Rt side
Transverse cracking



55' – Rt side
Transverse cracking



55' – Rt side
Transverse cracking



63' – Rt side
Transverse cracking



63' – Rt side
Transverse cracking



69' – Rt side
Transverse cracking



69' – Rt side
Transverse cracking



73' – Rt side
Transverse cracking



73' – Rt side
Transverse cracking



78' – Rt side
Transverse cracking



78' – Rt side
Transverse cracking



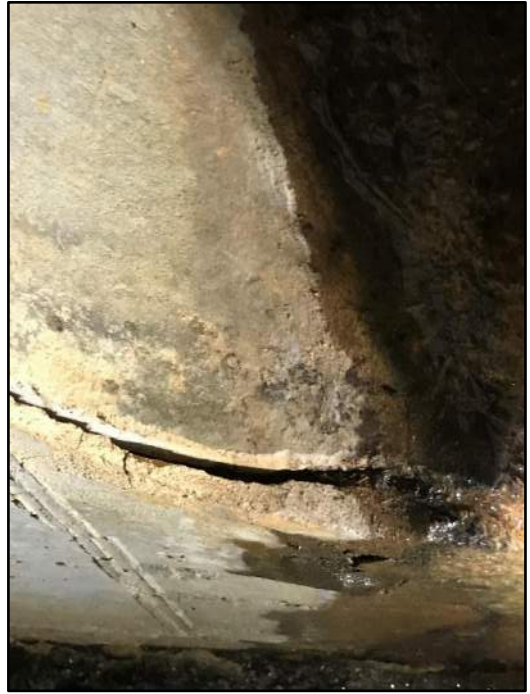
78' – Rt side
Transverse cracking



85' – Rt side
18" RCP cracking at tie interface



85' – Rt side
18" RCP cracking at tie interface



85' – Rt side
18" RCP cracking at tie interface



95' – Rt side
Transverse cracking



95' – Rt side
Transverse cracking



110' – Rt side
Transverse cracking



113' – Lt side
Transverse cracking



113' – Lt side
Transverse cracking



136' – Lt side
Transverse cracking



136' – Lt side
Transverse cracking



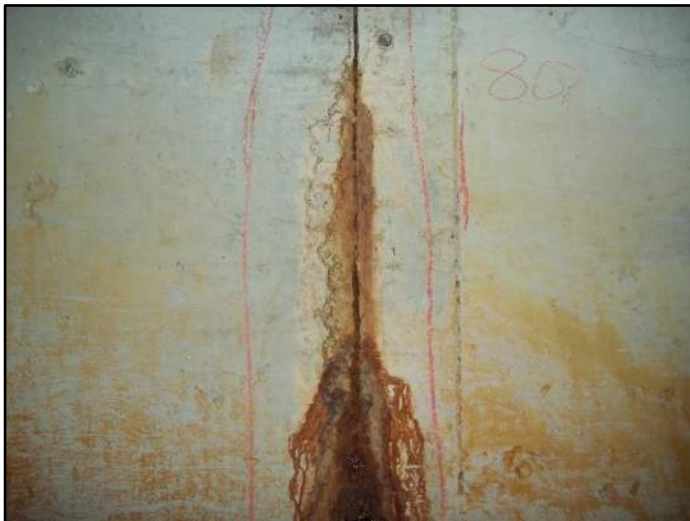
140' – Rt side
Transverse cracking



23' – Lt side
Transverse cracking



32' – Rt side
Transverse cracking



79.5' – Lt side
Separation at joint



79.5' – Lt side
Separation at joint



79.5' – Top
Separation at joint



79.5' – Top
Separation at joint



79.5' – Rt side
Separation at joint



79.5' – Rt side
Separation at joint



79.5' – Lt side
Separation at joint



94' – Lt side
Exposed Rebar



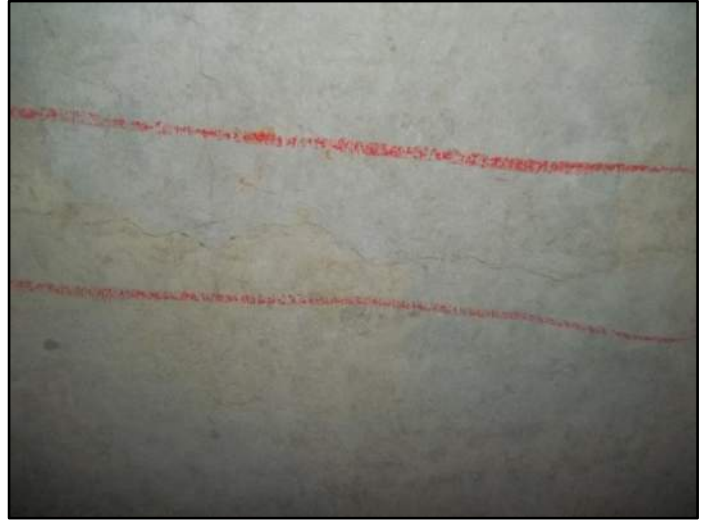
98' – Lt side and top
Transverse cracking



98' – Lt side and top
Transverse cracking



98' – Lt side and top
Transverse cracking



98' – Lt side and top
Transverse cracking



100' – Rt side
Transverse cracking



114' – Lt side
Transverse cracking



114' – Lt side
Transverse cracking



114' – Top side
Transverse cracking



114' – Top side
Transverse cracking



114' – Rt side
Transverse cracking



114' – Rt side
Transverse cracking



139.5' – Lt side
Separation at joint



139.5' – Lt side
Separation at joint



139.5' – Top side
Separation at joint



139.5' – Top side
Separation at joint



139.5' – Rt side
Separation at joint



139.5' – Rt side
Separation at joint



143' – Rt side
weeping crack



143' – Rt side
weeping crack



163' – Lt side
Transverse cracking



163' – Lt side
Transverse cracking



163' – Top
Transverse cracking with exposed rebar



163' – Top
Transverse cracking crack and exposed rebar



163' – Top side
Transverse cracking



163' – Rt side
Transverse cracking



163' – Rt side
Transverse cracking



200' – Lt side
Transverse cracking



200' – Lt side
Transverse cracking



200' – Lt side
Transverse cracking



200' – Top side
Transverse cracking



200' – Top side
Transverse cracking



200' – Rt side
Transverse cracking



200' – Rt side
Transverse cracking



228' – Lt side
Weeping crack



259' – Lt side
Separation at joint



259' – Lt side
Separation at joint



259' – Top
Separation at joint



259' – Top
Separation at joint



259' – Rt side
Separation at joint



259' – Rt side
Separation at joint



313' – Lt side
Transverse cracking



313' – Lt side
Transverse cracking



EP-5102 A-B

Project Information

Surveyor Name	GCS	Certificate Number	U-0917-07009391
Owner		Customer	
Drainage Area		PO Number	
Pipe Segment Reference	PIPE 5102	Date	10/14/2020 08:24
Street	GRACERN	City	COLUMBIA
Comments			

Manhole

Upstream MH	5102 A	Rim to Invert (U)	
Grade to Invert (U)		Rim to Grade (U)	
Downstream MH	5102 B	Rim to Invert (D)	
Grade to Invert (D)		Rim to Grade (D)	
Pipe Use	Stormwater Pipe	Direction of Survey	Downstream

Pipe

Height (Diameter)	60	Width	
Shape	Circular	Material	Reinforced Concrete Pipe
Lining Method		Pipe Joint Length	
Total Length	49.1	Length Surveyed	49.1
Year Constructed		Year Renewed	

Misc

Flow Control		Media Label	DVD
Purpose		Consequence of Failure	
Pre-Cleaning	No Pre-Cleaning	Date Cleaned	
Weather		Location Code	
Additional Info		Location Details	

Custom

Custom 1	Custom 2
Custom 3	Custom 4
Custom 5	Custom 6
Custom 7	Custom 8
Custom 9	Custom 10

Project			
Reverse Setup ID		Sheet (Group) Number	
Imperial Units (US)		Pressure Value	
Work Order		Project	
		CAROLINA CROSSROADS	

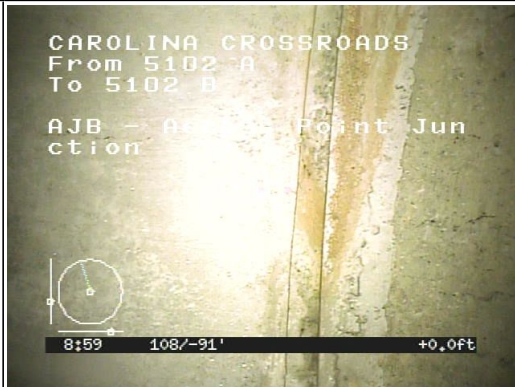


EP-5102 A-B

Coating Method		Completed	
		Yes	
Insp Tech Used			
CCTV	Yes	Laser	No
Sidewall	No	Sonar	No
Zoom	No	Other	No

Inspection	
Inspection Status	Complete Inspection
Reviewed By	Reviewer Certificate Number

Count Groups			
Taps	0	Roots	0
Cracks / Fractures	1	Broken / Holes / Collapse	2
Deposits	0	Obstruction	0
Abandoned Survey	0		

Project: CAROLINA CROSSROADS	
Date: 10/14/2020 8:24:00 AM	Pipe Segment Reference: PIPE 5102
Street: GRACERN	Upstream MH: 5102 A
Length Surveyed: 49.1	Downstream MH: 5102 B
Run Number:	Direction of Survey: Downstream
Height (Diameter): 60	Material: Reinforced Concrete Pipe

Distance	Fault Observation	Time	Picture
0.0	Access Point Junction Box Severity: None Remarks: 5102 A	17	 <p>CAROLINA CROSSROADS From 5102 A To 5102 B AJB - Access Point Junction Box 8:59 108/-91' +0.0ft</p>
0.0	Miscellaneous Water Level Severity: None Percent: 5	33	 <p>CAROLINA CROSSROADS From 5102 A To 5102 B MWL - Miscellaneous Water Level 8:59 0/1' +0.0ft</p>
2.0	Miscellaneous General Observation Severity: None Remarks: GAP OBSERVATION 2.769	01:49	 <p>CAROLINA CROSSROADS From 5102 A To 5102 B MGO - Miscellaneous General Observation 10.14.20 66/-85' +1.9ft</p>

Distance	Fault Observation	Time	Picture
2.0	Infiltration Stain Position: 9 To 11 Severity: None Joint Maint Weight: 1	02:23	
2.0	Crack Longitudinal Position: 12 Severity: None Joint Struct Weight: 2	02:52	
3.7	Hole Soil Visible Position: 12 Severity: None Cont Defect: S02 Remarks: LIFTING HOLE MAY NOT BE SEALED Struct Weight: 5	04:00	

EP-5102 A-B

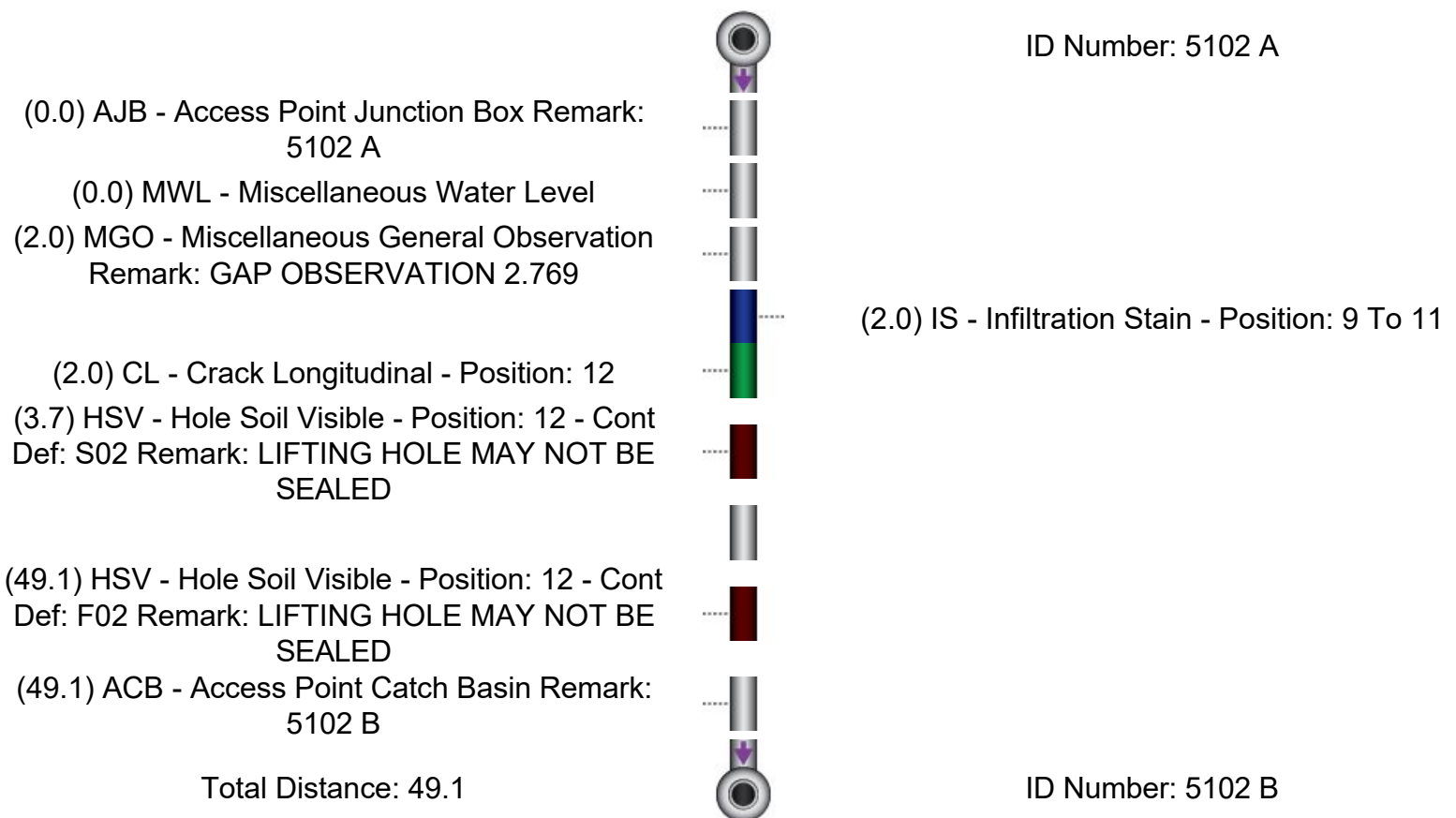
Distance	Fault Observation	Time	Picture
49.1	Hole Soil Visible Position: 12 Severity: None Cont Defect: F02 Remarks: LIFTING HOLE MAY NOT BE SEALED Struct Weight: 5	15:36	<p>Video Paused</p>
49.1	Access Point Catch Basin Severity: None Remarks: 5102 B	15:41	

Created with the  report generator

EP-5102 A-B

Project: CAROLINA CROSSROADS	
Date: 10/14/2020 8:24:00 AM	Pipe Segment Reference: PIPE 5102
Street: GRACERN	Upstream MH: 5102 A
Length Surveyed: 49.1	Downstream MH: 5102 B
Run Number:	Direction of Survey: Downstream
Height (Diameter): 60	Material: Reinforced Concrete Pipe

Severity
Light-1
Moderate-2
Average-3
Heavy-4
Severe-5



Nassco C.C.T.V. Defect Code Information

Grade	Structural	O&M	Overall
5	45	0	45
4	0	0	0
3	0	0	0
2	2	0	2
1	0	1	1
Overall	47	1	48
Number of Defects	10	1	11
Pipe Rating	5921	1100	5921
Pipe Ratings Index	4.7	1	4.4

Nassco C.C.T.V. Defect Code Information

EP-5102 A-B

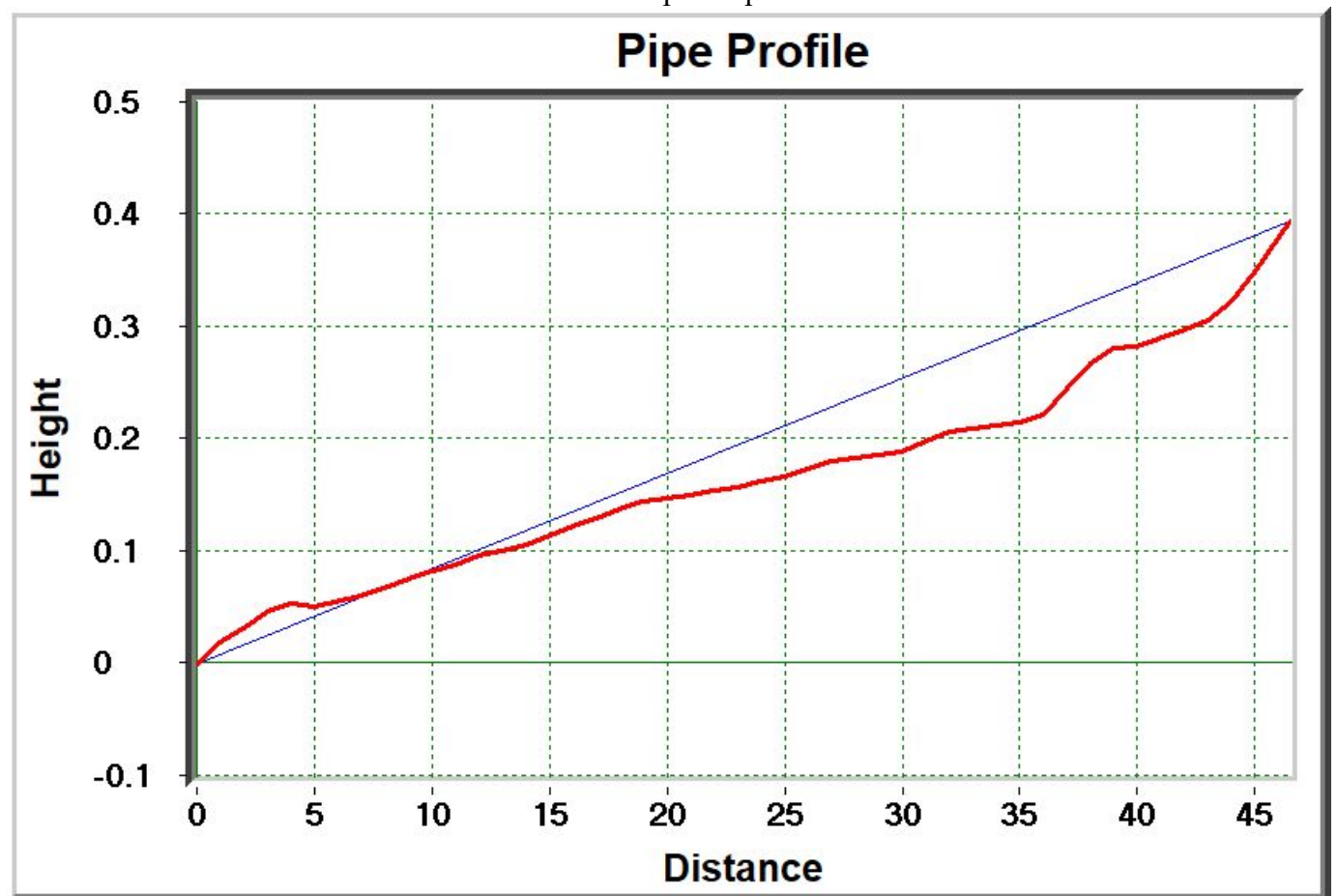
EP-5102 A-B

Distance	Video Ref	Code	Cont Defect	Value			Joint	Circumferential Location	
				Dimension		%		At / From	To
				1st	2nd				
0	17	AJB - Access Point Junction Box							
		5102 A							
0	33	MWL - Miscellaneous Water Level				5			
2	109	MGO - Miscellaneous General Observation							
		GAP OBSERVATION 2.769							
2	143	IS - Infiltration Stain				X	9	11	
2	172	CL - Crack Longitudinal				X	12		
3.7	240	HSV - Hole Soil Visible				S02			12
		LIFTING HOLE MAY NOT BE SEALED							
49.1	936	HSV - Hole Soil Visible	F02				12		
		LIFTING HOLE MAY NOT BE SEALED							
49.1	941	ACB - Access Point Catch Basin							
		5102 B							

Project: CAROLINA CROSSROADS	
Date: 10/14/2020 8:24:00 AM	Pipe Segment Reference: PIPE 5102
Street: GRACERN	Upstream MH: 5102 A
Length Surveyed: 49.1	Downstream MH: 5102 B
Run Number:	Direction of Survey: Downstream
Height (Diameter): 60	Material: Reinforced Concrete Pipe

Percent Grade Mean: 0.91
 Plot Distance From: 0 To 50
 Max Percent Difference: 3
 Number of Window Values: 1
 Percent Difference Max for Windows Values: 60
 Number of Feet to Average: 1
 Final number of points plotted: 43

EP-5102 A-B





EP-5102 B-C

Project Information

Surveyor Name	GCS	Certificate Number	U-0917-07009391
Owner		Customer	
Drainage Area		PO Number	
Pipe Segment Reference	PIPE 5102	Date	10/14/2020 09:15
Street	GRACERN	City	COLUMBIA
Comments			

Manhole

Upstream MH	5102 B	Rim to Invert (U)	
Grade to Invert (U)		Rim to Grade (U)	
Downstream MH	5102 C	Rim to Invert (D)	
Grade to Invert (D)		Rim to Grade (D)	
Pipe Use	Stormwater Pipe	Direction of Survey	Downstream

Pipe

Height (Diameter)	60	Width	
Shape	Circular	Material	Reinforced Concrete Pipe
Lining Method		Pipe Joint Length	
Total Length	21.4	Length Surveyed	21.4
Year Constructed		Year Renewed	

Misc

Flow Control		Media Label	DVD
Purpose		Consequence of Failure	
Pre-Cleaning	No Pre-Cleaning	Date Cleaned	
Weather		Location Code	
Additional Info		Location Details	

Custom

Custom 1	Custom 2
Custom 3	Custom 4
Custom 5	Custom 6
Custom 7	Custom 8
Custom 9	Custom 10

Project			
Reverse Setup ID		Sheet (Group) Number	
Imperial Units (US)		Pressure Value	
Work Order		Project	
		CAROLINA CROSSROADS	


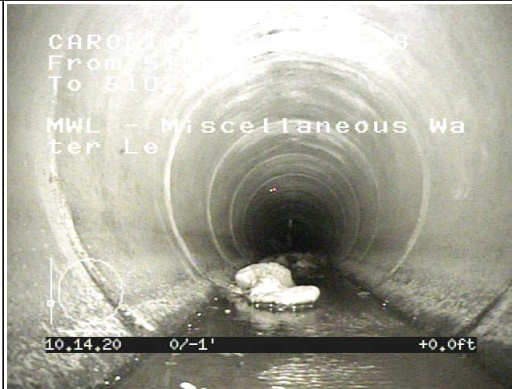

EP-5102 B-C

Coating Method		Completed	
		No	
Insp Tech Used			
CCTV	Yes	Laser	No
Sidewall	No	Sonar	No
Zoom	No	Other	No

Inspection	
Inspection Status	Complete Inspection
Reviewed By	Reviewer Certificate Number

Count Groups			
Taps	0	Roots	0
Cracks / Fractures	0	Broken / Holes / Collapse	2
Deposits	0	Obstruction	1
Abandoned Survey	1		

Project: CAROLINA CROSSROADS	
Date: 10/14/2020 9:15:00 AM	Pipe Segment Reference: PIPE 5102
Street: GRACERN	Upstream MH: 5102 B
Length Surveyed: 21.4	Downstream MH: 5102 C
Run Number:	Direction of Survey: Downstream
Height (Diameter): 60	Material: Reinforced Concrete Pipe

Distance	Fault Observation	Time	Picture
0.0	Access Point Catch Basin Severity: None Remarks: 5102 B	15	
0.0	Miscellaneous Water Level Severity: None Percent: 5	30	
3.1	Hole Position: 12 Severity: None Cont Defect: S01 Remarks: LIFTING HOLE MAY NOT BE SEALED Struct Weight: 4	02:04	

Distance	Fault Observation	Time	Picture
6.2	Miscellaneous General Observation Severity: None Remarks: ROCKS AND MUD IN PIPE	02:45	
11.5	Obstruction Other Position: 5 To 7 Severity: None Percent: 15 Remarks: ROCK AND DEBRIS AHEAD Maint Weight: 3	05:58	
21.4	Miscellaneous General Observation Severity: None Remarks: TOO MUCH DEBRIS FOR CAMERA TO PASS	08:43	

EP-5102 B-C

Distance	Fault Observation	Time	Picture
21.4	Hole Position: 12 Severity: None Cont Defect: F01 Remarks: LIFTING HOLE MAY NOT BE SEALED Struct Weight: 4	09:38	
21.4	Miscellaneous Abandoned Survey Severity: None Remarks: TOO MUCH DEBRIS	10:00	

Created with the  report generator

EP-5102 B-C

Project: CAROLINA CROSSROADS	
Date: 10/14/2020 9:15:00 AM	Pipe Segment Reference: PIPE 5102
Street: GRACERN	Upstream MH: 5102 B
Length Surveyed: 21.4	Downstream MH: 5102 C
Run Number:	Direction of Survey: Downstream
Height (Diameter): 60	Material: Reinforced Concrete Pipe

Severity
Light-1
Moderate-2
Average-3
Heavy-4
Severe-5

ID Number: 5102 B

(0.0) ACB - Access Point Catch Basin Remark: 5102 B

(0.0) MWL - Miscellaneous Water Level

(3.1) H - Hole - Position: 12 - Cont Def: S01
Remark: LIFTING HOLE MAY NOT BE SEALED

(6.2) MGO - Miscellaneous General Observation
Remark: ROCKS AND MUD IN PIPE

(11.5) OBZ - Obstruction Other - Position: 5 To 7
Remark: ROCK AND DEBRIS AHEAD

(21.4) MGO - Miscellaneous General Observation
Remark: TOO MUCH DEBRIS FOR CAMERA TO PASS

(21.4) H - Hole - Position: 12 - Cont Def: F01
Remark: LIFTING HOLE MAY NOT BE SEALED

(21.4) MSA - Miscellaneous Abandoned Survey
Remark: TOO MUCH DEBRIS

Total Distance: 21.4



ID Number: 5102 C

Nassco C.C.T.V. Defect Code Information

Grade	Structural	O&M	Overall
5	0	0	0
4	16	0	16
3	0	3	3
2	0	0	0
1	0	0	0
Overall	16	3	19
Number of Defects	4	1	5
Pipe Rating	4400	3100	4431
Pipe Ratings Index	4	3	3.8

Nassco C.C.T.V. Defect Code Information

EP-5102 B-C

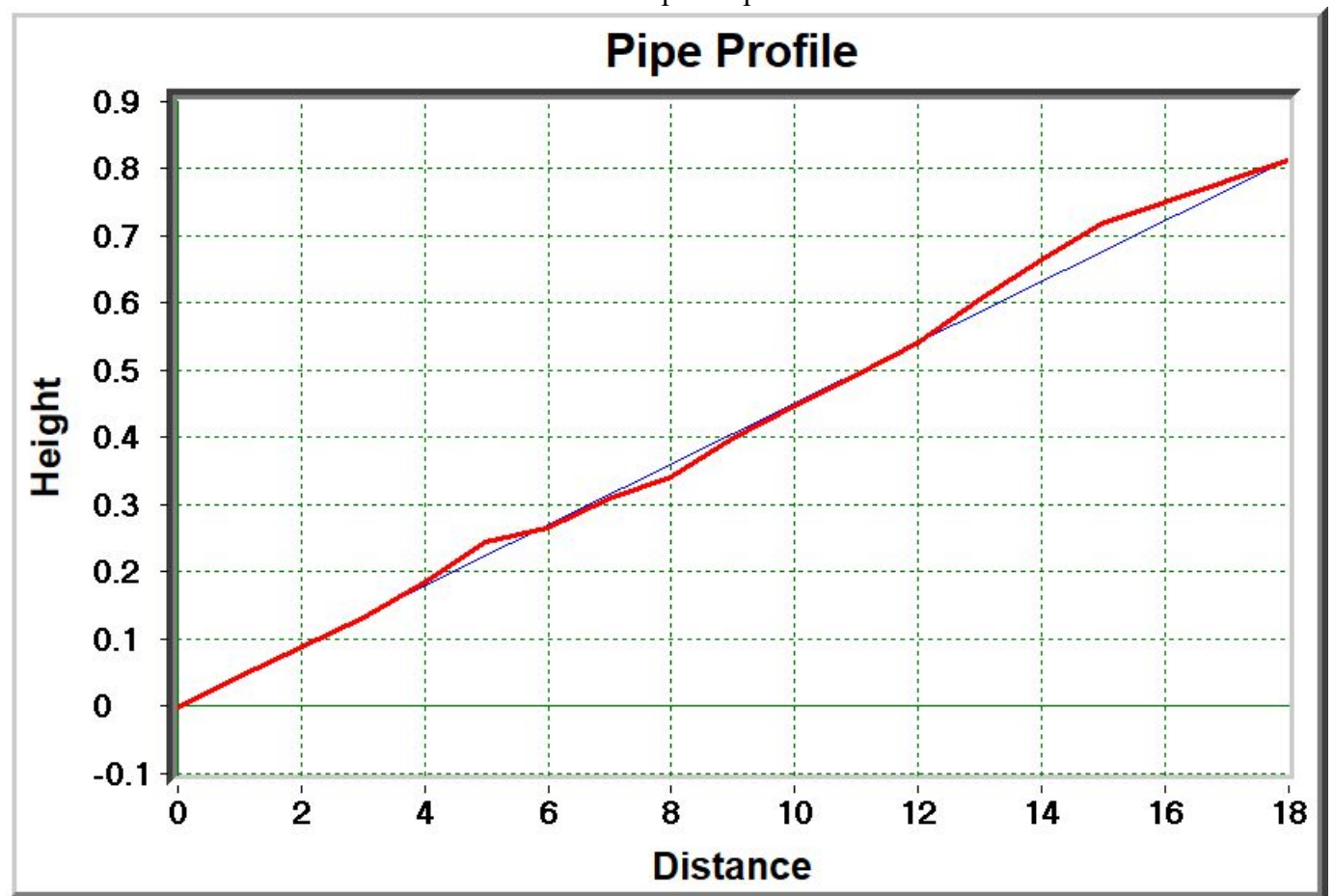
EP-5102 B-C

Distance	Video Ref	Code	Cont Defect	Value			Joint	Circumferential Location	
				Dimension		%		At / From	To
				1st	2nd				
0	15	ACB - Access Point Catch Basin							
		5102 B							
0	30	MWL - Miscellaneous Water Level				5			
3.1	124	H - Hole	S01				12		
		LIFTING HOLE MAY NOT BE SEALED							
6.2	165	MGO - Miscellaneous General Observation							
		ROCKS AND MUD IN PIPE							
11.5	358	OBZ - Obstruction Other				15		5 7	
		ROCK AND DEBRIS AHEAD							
21.4	523	MGO - Miscellaneous General Observation							
		TOO MUCH DEBRIS FOR CAMERA TO PASS							
21.4	578	H - Hole	F01				12		
		LIFTING HOLE MAY NOT BE SEALED							
21.4	600	MSA - Miscellaneous Abandoned Survey							
		TOO MUCH DEBRIS							

Project: CAROLINA CROSSROADS	
Date: 10/14/2020 9:15:00 AM	Pipe Segment Reference: PIPE 5102
Street: GRACERN	Upstream MH: 5102 B
Length Surveyed: 21.4	Downstream MH: 5102 C
Run Number:	Direction of Survey: Downstream
Height (Diameter): 60	Material: Reinforced Concrete Pipe

Percent Grade Mean: 4.68
 Plot Distance From: 0 To 22
 Max Percent Difference: 3
 Number of Window Values: 1
 Percent Difference Max for Windows Values: 60
 Number of Feet to Average: 1
 Final number of points plotted: 17

EP-5102 B-C





EP-5102 D-C

Project Information

Surveyor Name	GCS	Certificate Number	U-0917-07009391
Owner		Customer	
Drainage Area		PO Number	
Pipe Segment Reference	PIPE 5102	Date	10/20/2020 09:53
Street	RIVER CHASE WAY	City	COLUMBIA
Comments			

Manhole

Upstream MH	5102 C	Rim to Invert (U)	
Grade to Invert (U)		Rim to Grade (U)	
Downstream MH	5102 D	Rim to Invert (D)	
Grade to Invert (D)		Rim to Grade (D)	
Pipe Use	Stormwater Pipe	Direction of Survey	Upstream

Pipe

Height (Diameter)	60	Width	
Shape	Circular	Material	Reinforced Concrete Pipe
Lining Method		Pipe Joint Length	
Total Length	111.4	Length Surveyed	111.4
Year Constructed		Year Renewed	

Misc

Flow Control		Media Label	DVD
Purpose		Consequence of Failure	
Pre-Cleaning	No Pre-Cleaning	Date Cleaned	
Weather		Location Code	
Additional Info		Location Details	

Custom

Custom 1	Custom 2
Custom 3	Custom 4
Custom 5	Custom 6
Custom 7	Custom 8
Custom 9	Custom 10

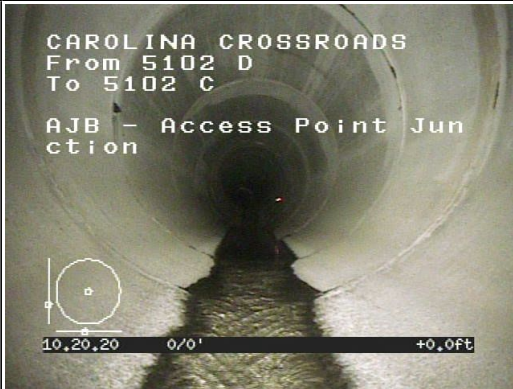
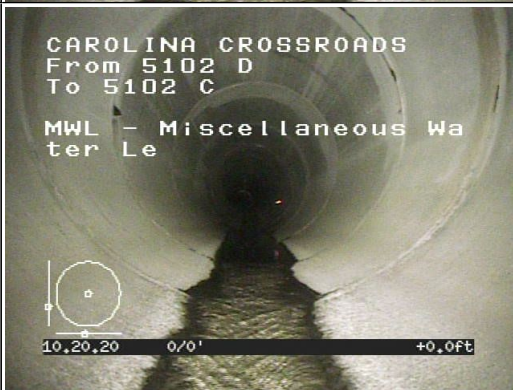

Project			
Reverse Setup ID		Sheet (Group) Number	EP-5102 D-C
Imperial Units (US)	True	Pressure Value	
Work Order		Project	CAROLINA CROSSROADS

Coating Method		Completed	Yes
Insp Tech Used			
CCTV	Yes	Laser	No
Sidewall	No	Sonar	No
Zoom	No	Other	No

Inspection			
Inspection Status	Complete Inspection	Reviewer Certificate Number	
Reviewed By			

Count Groups			
Taps	0	Roots	0
Cracks / Fractures	2	Broken / Holes / Collapse	2
Deposits	0	Obstruction	1
Abandoned Survey	0		

Project: CAROLINA CROSSROADS	
Date: 10/20/2020 9:53:00 AM	Pipe Segment Reference: PIPE 5102
Street: RIVER CHASE WAY	Upstream MH: 5102 C
Length Surveyed: 111.4	Downstream MH: 5102 D
Run Number:	Direction of Survey: Upstream
Height (Diameter): 60	Material: Reinforced Concrete Pipe

Distance	Fault Observation	Time	Picture
0.0	Access Point Junction Box Severity: None Remarks: 5102 D	15	
0.0	Miscellaneous Water Level Severity: None Percent: 5	31	
5.4	Intruding Sealing Material Sealing Ring Position: 12 To 1 Severity: None Percent: 5 Maint Weight: 2	01:43	

Distance	Fault Observation	Time	Picture
5.4	Infiltration Stain Position: 12 To 4 Severity: None Joint Maint Weight: 1	02:07	<p>CAROLINA CROSSROADS From 5102 D To 5102 C</p> <p>IS - Infiltration Stain</p> <p>10:02 41/-80' +5.4ft</p>
9.0	Intruding Sealing Material Sealing Ring Position: 2 To 2 Severity: None Percent: 5 Maint Weight: 2	03:40	<p>CAROLINA CROSSROADS From 5102 D To 5102 C</p> <p>ISSR - Intruding Sealing Mat</p> <p>10:20,20 27/-84' +8.9ft</p>
17.1	Crack Longitudinal Position: 12 Severity: None Joint Struct Weight: 2	04:29	<p>CAROLINA CROSSROADS From 5102 D To 5102 C</p> <p>CL - Crack Longitudinal</p> <p>10:06 71/-73' +17.1ft</p>

EP-5102 D-C

Distance	Fault Observation	Time	Picture
17.1	Crack Longitudinal Position: 10 Severity: None Joint Struct Weight: 2	04:54	<p>CAROLINA CROSSROADS 102 D To 5102 C CL - Crack Longitudina l 10,20,20 144/-103' +17.1ft</p>
17.1	Infiltration Stain Position: 8 To 11 Severity: None Joint Maint Weight: 1	05:23	<p>CAROLINA CROSSROADS From 5102 D To 5102 C IS - Infiltration Stai n 10,20,20 114/-89' +17.1ft</p>
17.1	Infiltration Stain Position: 1 To 4 Severity: None Joint Maint Weight: 1	05:55	<p>CAROLINA CROSSROADS From 5102 D To 5102 C IS - Infiltration Stai n 10:06 11/-88' +17.1ft</p>

EP-5102 D-C

Distance	Fault Observation	Time	Picture
25.1	Miscellaneous General Observation Severity: None Remarks: GAP OBSERVATION 3.473	07:31	
25.3	Infiltration Stain Position: 11 Severity: None Joint Maint Weight: 1	08:37	
32.7	Surface Damage Aggregate Missing Position: 11 To 2 Severity: None Joint Remarks: REBAR EXPOSED Struct Weight: 4	10:05	

EP-5102 D-C

Distance	Fault Observation	Time	Picture
42.1	<p>Miscellaneous General Observation</p> <p>Severity: None</p> <p>Remarks: GAP OBSERVATION 3.061</p>	12:10	
44.9	<p>Miscellaneous General Observation</p> <p>Severity: None</p> <p>Remarks: LIFTING HOLE MAY NOT BE SEALED</p>	13:32	
51.5	<p>Hole Soil Visible</p> <p>Position: 12</p> <p>Severity: None</p> <p>Cont Defect: S01</p> <p>Remarks: LIFTING HOLES MAY NOT BE SEALED</p> <p>Struct Weight: 5</p>	15:37	

EP-5102 D-C

Distance	Fault Observation	Time	Picture
110.9	Hole Soil Visible Position: 12 Severity: None Cont Defect: F01 Remarks: LIFTING HOLES MAY NOT BE SEALED Struct Weight: 5	26:36	 <p>CAROLINA CROSSROADS From 5102 D To 5102 C</p> <p>HSV - Hole Soil Visible</p> <p>10:27 0/0' +110.8ft</p>
111.4	Obstruction Other Position: 3 To 7 Severity: None Percent: 25 Remarks: BLOCK CONCRETE ETC AHEAD Maint Weight: 4	25:27	 <p>CAROLINA CROSSROADS From 5102 D To 5102 C</p> <p>OBZ - Obstruction Other</p> <p>10:26 0/-1' +111.3ft</p>
111.4	Access Point Catch Basin Severity: None Remarks: 5102 C	26:07	 <p>CAROLINA CROSSROADS From 5102 D To 5102 C</p> <p>ACB - Access Point Catch Basin</p> <p>10:26 0/0' +111.3ft</p>

Created with the  report generator

EP-5102 D-C

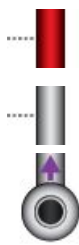


Severity
Light-1
Moderate-2
Average-3
Heavy-4
Severe-5

(110.9) HSV - Hole Soil Visible - Position: 12 -
Cont Def: F01 Remark: LIFTING HOLES MAY
NOT BE SEALED

(111.4) OBZ - Obstruction Other - Position: 3 To 7
Remark: BLOCK CONCRETE ETC AHEAD
(111.4) ACB - Access Point Catch Basin Remark:
5102 C

Total Distance: 111.4



EP-5102 D-C

ID Number: 5102 C

Created with the  report generator

Nassco C.C.T.V. Defect Code Information

Grade	Structural	O&M	Overall
5	60	0	60
4	4	4	8
3	0	0	0
2	4	4	8
1	0	4	4
Overall	68	12	80
Number of Defects	15	7	22
Pipe Rating	5A41	4122	5A42
Pipe Ratings Index	4.5	1.7	3.6

Nassco C.C.T.V. Defect Code Information

EP-5102 D-C

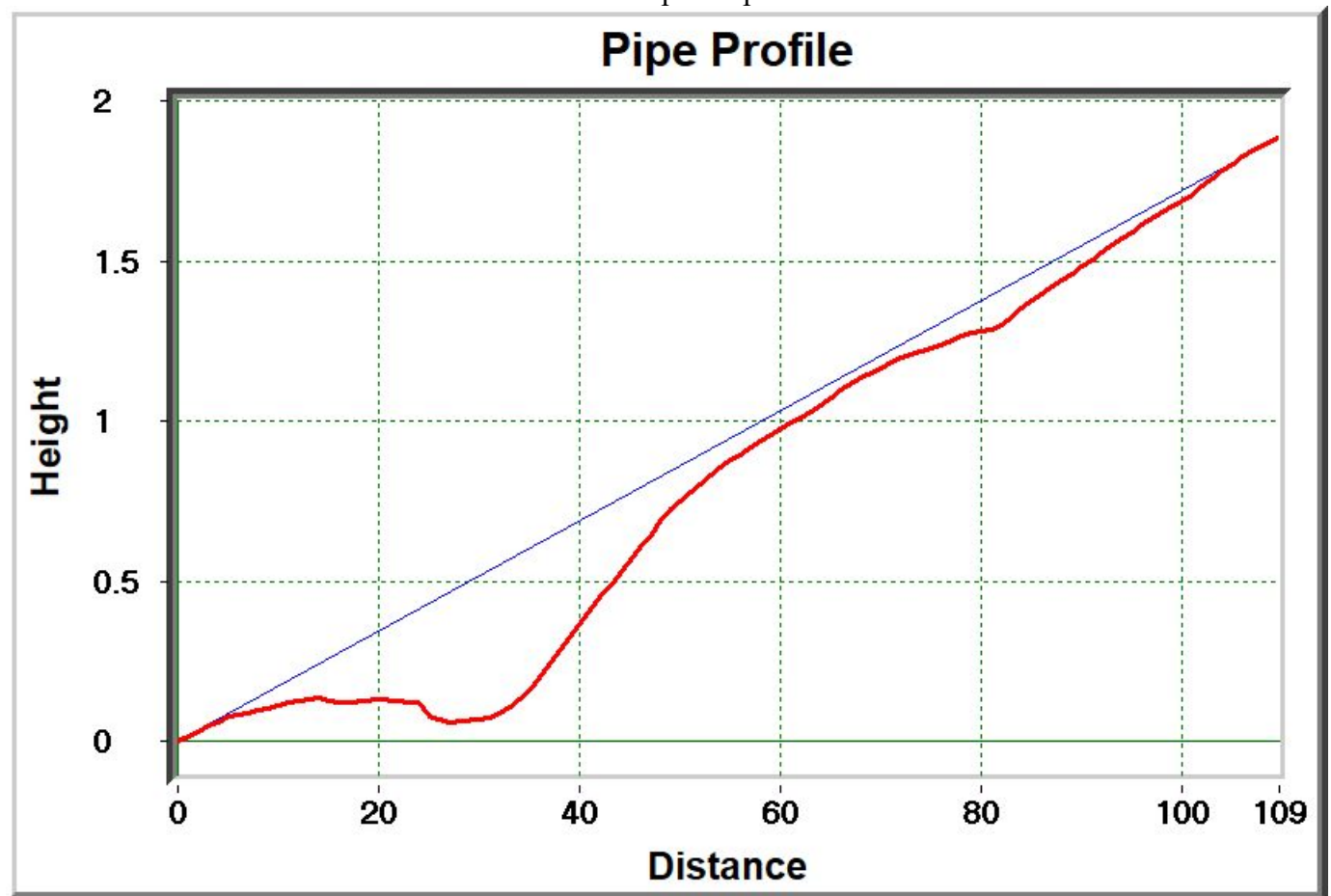
EP-5102 D-C

Distance	Video Ref	Code	Cont Defect	Value			Joint	Circumferential Location		
				Dimension		%		At / From	To	
				1st	2nd					
0	15	AJB - Access Point Junction Box								
		5102 D								
0	31	MWL - Miscellaneous Water Level				5				
5.4	103	ISSR - Intruding Sealing Material Sealing Ring				5		12	1	
5.4	127	IS - Infiltration Stain					X	12	4	
9	220	ISSR - Intruding Sealing Material Sealing Ring				5		2	2	
17.1	269	CL - Crack Longitudinal					X	12		
17.1	294	CL - Crack Longitudinal					X	10		
17.1	323	IS - Infiltration Stain					X	8		11
17.1	355	IS - Infiltration Stain					X	1		4
25.1	451	MGO - Miscellaneous General Observation								
		GAP OBSERVATION 3.473								
25.3	517	IS - Infiltration Stain				X	11			
32.7	605	SAM - Surface Damage Aggregate Missing				X	11	2		
		REBAR EXPOSED								
42.1	730	MGO - Miscellaneous General Observation								
		GAP OBSERVATION 3.061								
44.9	812	MGO - Miscellaneous General Observation								
		LIFTING HOLE MAY NOT BE SEALED								
51.5	937	HSV - Hole Soil Visible	S01				12			
		LIFTING HOLES MAY NOT BE SEALED								
110.9	1596	HSV - Hole Soil Visible	F01				12			
		LIFTING HOLES MAY NOT BE SEALED								
111.4	1527	OBZ - Obstruction Other			25		3	7		
		BLOCK CONCRETE ETC AHEAD								
111.4	1567	ACB - Access Point Catch Basin								
		5102 C								

Project: CAROLINA CROSSROADS	
Date: 10/20/2020 9:53:00 AM	Pipe Segment Reference: PIPE 5102
Street: RIVER CHASE WAY	Upstream MH: 5102 C
Length Surveyed: 111.4	Downstream MH: 5102 D
Run Number:	Direction of Survey: Upstream
Height (Diameter): 60	Material: Reinforced Concrete Pipe

Percent Grade Mean: 1.71
 Plot Distance From: 0 To 112
 Max Percent Difference: 3
 Number of Window Values: 1
 Percent Difference Max for Windows Values: 60
 Number of Feet to Average: 1
 Final number of points plotted: 96

EP-5102 D-C





EP-5102 D-E

Project Information

Surveyor Name	GCS	Certificate Number	U-0917-07009391
Owner		Customer	
Drainage Area		PO Number	
Pipe Segment Reference	PIPE 5102	Date	10/20/2020 09:30
Street	RIVER CHASE WAY	City	COLUMBIA
Comments			

Manhole

Upstream MH	5102 D	Rim to Invert (U)	
Grade to Invert (U)		Rim to Grade (U)	
Downstream MH	5102 E	Rim to Invert (D)	
Grade to Invert (D)		Rim to Grade (D)	
Pipe Use	Stormwater Pipe	Direction of Survey	Downstream

Pipe

Height (Diameter)	60	Width	
Shape	Circular	Material	Reinforced Concrete Pipe
Lining Method		Pipe Joint Length	
Total Length	49.5	Length Surveyed	49.5
Year Constructed		Year Renewed	

Misc

Flow Control		Media Label	DVD
Purpose		Consequence of Failure	
Pre-Cleaning	No Pre-Cleaning	Date Cleaned	
Weather		Location Code	
Additional Info		Location Details	

Custom

Custom 1	Custom 2
Custom 3	Custom 4
Custom 5	Custom 6
Custom 7	Custom 8
Custom 9	Custom 10

Project

Reverse Setup

ID

Imperial Units
(US)

True

Sheet (Group)
Number

EP-5102 D-E

Pressure Value

Work Order

Project

CAROLINA
CROSSROADS

Coating Method

Completed

Yes

Insp Tech Used

CCTV Yes

Laser No

Sidewall No

Sonar No

Zoom No

Other No

Inspection

Inspection Complete
Status Inspection

Reviewed By

Reviewer
Certificate
Number

Count Groups

Taps 0

Roots 0

Cracks /
Fractures 6

Broken / Holes /
Collapse 1

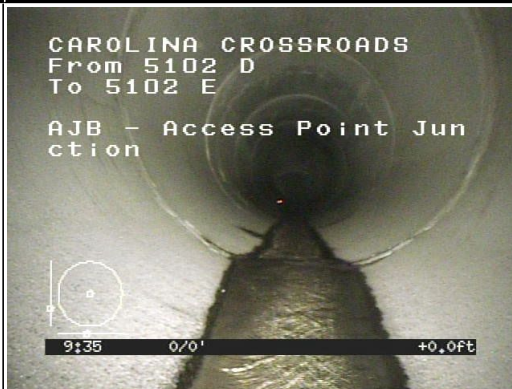
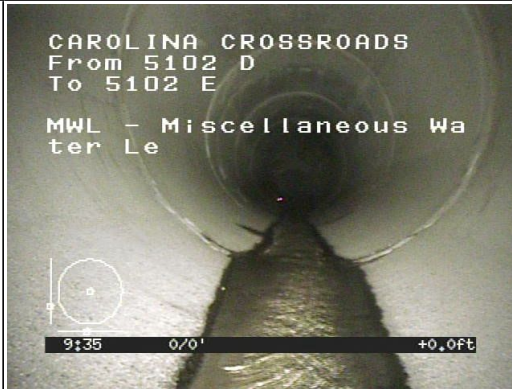
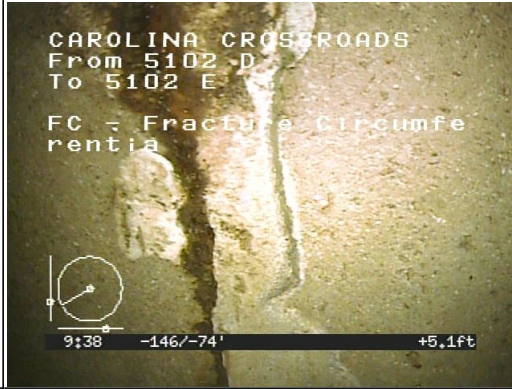
Deposits 0

Obstruction 0

Abandoned
Survey 0

Created with the  report generator

Project: CAROLINA CROSSROADS	
Date: 10/20/2020 9:30:00 AM	Pipe Segment Reference: PIPE 5102
Street: RIVER CHASE WAY	Upstream MH: 5102 D
Length Surveyed: 49.5	Downstream MH: 5102 E
Run Number:	Direction of Survey: Downstream
Height (Diameter): 60	Material: Reinforced Concrete Pipe

Distance	Fault Observation	Time	Picture
0.0	Access Point Junction Box Severity: None Remarks: 5102 D	26	
0.0	Miscellaneous Water Level Severity: None Percent: 5	42	
5.2	Fracture Circumferential Position: 6 To 7 Severity: None Joint Remarks: FRACTURE IN BELL OR PARGING Struct Weight: 2	03:35	

Distance	Fault Observation	Time	Picture
5.2	Fracture Circumferential Position: 5 To 5 Severity: None Joint Remarks: FRACTURE IN BELL OR PARGING Struct Weight: 2	04:19	
5.6	Crack Longitudinal Position: 12 Severity: None Joint Struct Weight: 2	02:06	
5.6	Infiltration Stain Position: 8 To 4 Severity: None Joint Maint Weight: 1	02:38	

EP-5102 D-E

Distance	Fault Observation	Time	Picture
8.7	Hole Position: 8 Severity: None Remarks: INFILTRATION PRESENT Struct Weight: 4	05:21	<p>CAROLINA CROSSROADS From 5102 D To 5102 E H - Hole</p>
12.9	Miscellaneous General Observation Severity: None Remarks: GAP OBSERVATION 1.386	06:26	<p>CAROLINA CROSSROADS From 5102 D To 5102 E MGO - Miscellaneous General</p>
13.0	Fracture Circumferential Position: 7 To 8 Severity: None Joint Remarks: FRACTURE IN BELL OR SPIGOT Struct Weight: 2	07:32	<p>CAROLINA CROSSROADS From 5102 D To 5102 E FC - Fracture Circumferential</p>

EP-5102 D-E

Distance	Fault Observation	Time	Picture
13.0	Infiltration Weeper Position: 4 To 5 Severity: None Joint Maint Weight: 2	08:00	
20.6	Infiltration Weeper Position: 7 To 8 Severity: None Joint Maint Weight: 2	08:59	
20.6	Fracture Circumferential Position: 4 To 5 Severity: None Joint Remarks: FRACTURE IN SPIGOT WEEP Struct Weight: 2	09:44	

EP-5102 D-E

Distance	Fault Observation	Time	Picture
20.6	Infiltration Weeper Position: 4 To 5 Severity: None Joint Maint Weight: 2	10:18	
23.2	Crack Circumferential Position: 2 To 3 Severity: None Struct Weight: 1	10:58	
29.0	Miscellaneous General Observation Severity: None Remarks: GAP OBSERVATION 3.659	12:18	

EP-5102 D-E

Distance	Fault Observation	Time	Picture
49.5	<p>Access Point Junction Box</p> <p>Severity: None</p> <p>Remarks: HIDDEN JUNCTION AT 5102 E</p>	16:33	

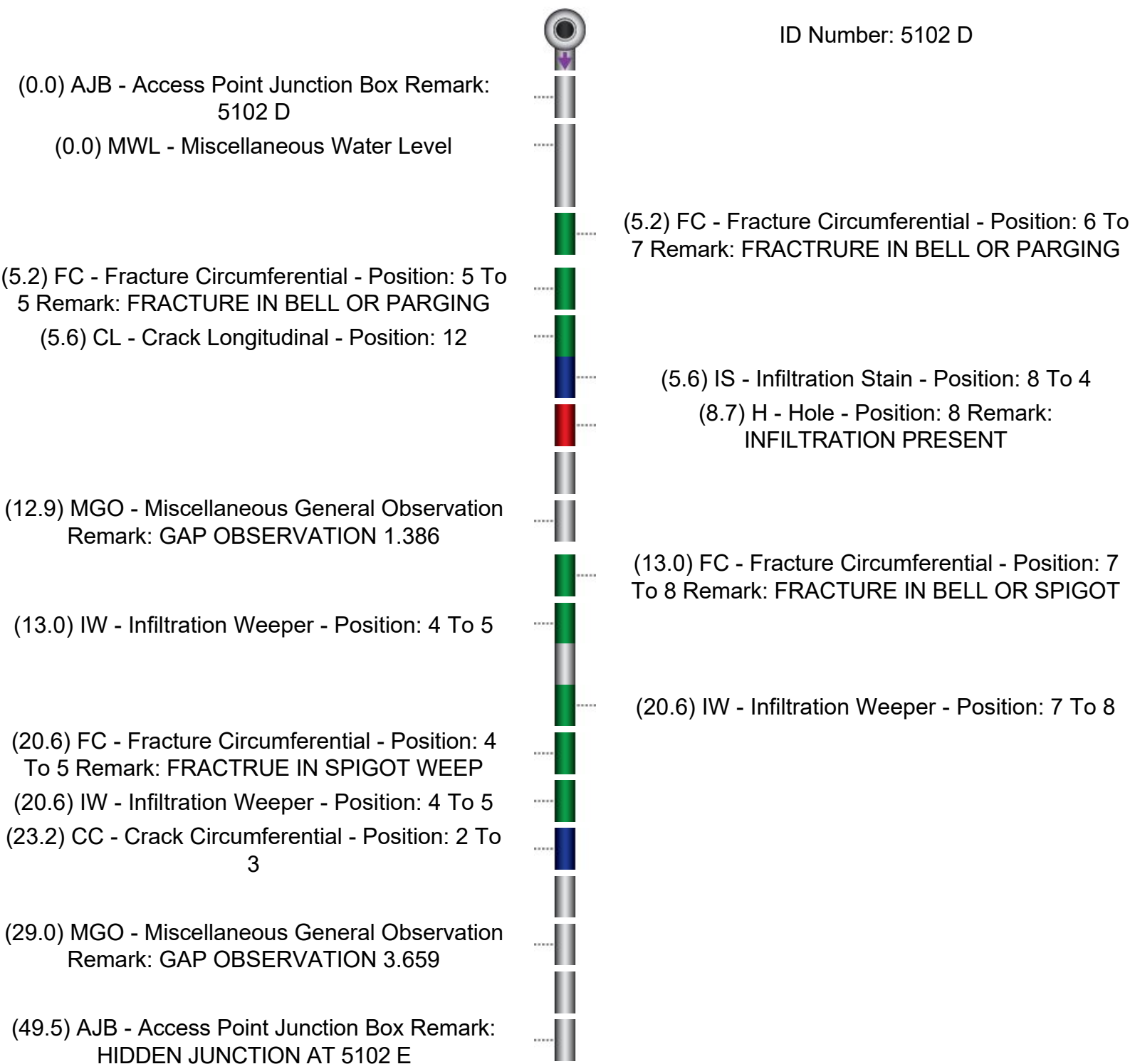
Created with the  report generator

EP-5102 D-E



Project: CAROLINA CROSSROADS	
Date: 10/20/2020 9:30:00 AM	Pipe Segment Reference: PIPE 5102
Street: RIVER CHASE WAY	Upstream MH: 5102 D
Length Surveyed: 49.5	Downstream MH: 5102 E
Run Number:	Direction of Survey: Downstream
Height (Diameter): 60	Material: Reinforced Concrete Pipe

Severity
Light-1
Moderate-2
Average-3
Heavy-4
Severe-5





Created with the  report generator

EP-5102 D-E

Nassco C.C.T.V. Defect Code Information

Grade	Structural	O&M	Overall
5	0	0	0
4	4	0	4
3	0	0	0
2	10	6	16
1	1	1	2
Overall	15	7	22
Number of Defects	7	4	11
Pipe Rating	4125	2311	4128
Pipe Ratings Index	2.1	1.8	2

Nassco C.C.T.V. Defect Code Information

EP-5102 D-E

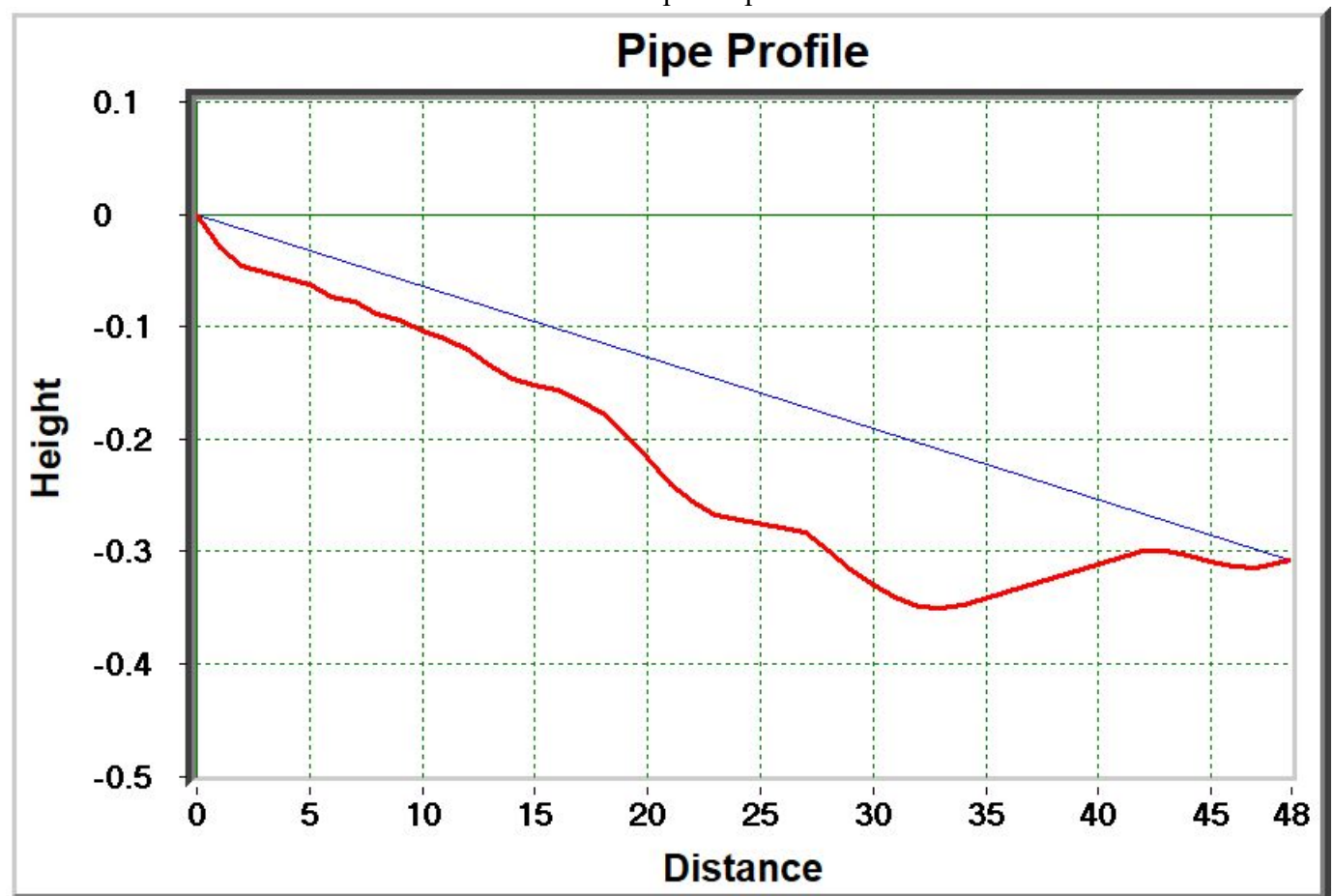
EP-5102 D-E

Distance	Video Ref	Code	Cont Defect	Value			Joint	Circumferential Location	
				Dimension		%		At / From	To
				1st	2nd				
0	26	AJB - Access Point Junction Box							
		5102 D							
0	42	MWL - Miscellaneous Water Level				5			
5.2	215	FC - Fracture Circumferential					X	6	7
		FRACTRURE IN BELL OR PARGING							
5.2	259	FC - Fracture Circumferential					X	5	5
		FRACTURE IN BELL OR PARGING							
5.6	126	CL - Crack Longitudinal					X	12	
5.6	158	IS - Infiltration Stain					X	8	4
8.7	321	H - Hole						8	
		INFILTRATION PRESENT							
12.9	386	MGO - Miscellaneous General Observation							
		GAP OBSERVATION 1.386							
13	452	FC - Fracture Circumferential					X	7	8
		FRACTURE IN BELL OR SPIGOT							
13	480	IW - Infiltration Weeper					X	4	5
20.6	539	IW - Infiltration Weeper					X	7	8
20.6	584	FC - Fracture Circumferential					X	4	5
		FRACTRUE IN SPIGOT WEEP							
20.6	618	IW - Infiltration Weeper					X	4	5
23.2	658	CC - Crack Circumferential						2	3
29	738	MGO - Miscellaneous General Observation							
		GAP OBSERVATION 3.659							
49.5	993	AJB - Access Point Junction Box							
		HIDDEN JUNCTION AT 5102 E							

Project: CAROLINA CROSSROADS	
Date: 10/20/2020 9:30:00 AM	Pipe Segment Reference: PIPE 5102
Street: RIVER CHASE WAY	Upstream MH: 5102 D
Length Surveyed: 49.5	Downstream MH: 5102 E
Run Number:	Direction of Survey: Downstream
Height (Diameter): 60	Material: Reinforced Concrete Pipe

Percent Grade Mean: -0.96
 Plot Distance From: 0 To 51
 Max Percent Difference: 3
 Number of Window Values: 1
 Percent Difference Max for Windows Values: 60
 Number of Feet to Average: 1
 Final number of points plotted: 37

EP-5102 D-E



I-20/I-26/I-126 Corridor Improvement Project

Alignment 126P, Station 63+20

Structure EP-5102

60" RCP

Summary:

F&ME assessed the overall condition of a 60" RCP designated as EP-5102.

Observations:

- Dimensions – Verified 60" RCP. Length was not measured due to obstructions in pipe; plan length of 392 LF.
- Scan direction – Outfall to inlet.
- General notes – Joints on 6' spacing. 217 LF of pipe was assessed outfall to inlet direction. Video was terminated due to concrete blocks blocking line at I-26 median.
- Observations:
 - 1) 6.9 feet – Missing surface concrete; visible rebar.
 - 2) 13.8 feet – 0.81" gap in joint.
 - 3) 21.6 feet – Intruding sealing ring.
 - 4) 29.5 feet – 1.07" gap in joint; missing surface concrete; visible rebar.
 - 5) 38.5 feet – Circumferential crack in pipe.
 - 6) 45.6 feet – Circumferential crack in pipe.
 - 7) 53.7 feet – 0.67" gap in joint.
 - 8) 61.6 feet – 2.22" gap in joint; intruding and broken sealing ring; infiltration weeping.
 - 9) 73.7 feet – 2.20" gap in joint; fine root intrusion in joint.
 - 10) 82.2 feet – Blind junction box.
 - 11) 89.4 feet – 0.44" gap in joint.
 - 12) 97.5 feet – 1.30" gap in joint; intruding sealing ring.
 - 13) 105.5 feet – Intruding sealing ring
 - 14) 114.0 feet – 1.26" gap in joint; circumferential crack in pipe.
 - 15) 121.8 feet – 1.46" gap in joint; fine root intrusion in joint.
 - 16) 126.0 feet – Lifting hole with root infiltration and soil infiltration.
 - 17) 130.4 feet – 1.36" gap in pipe; circumferential fracture around joint, fine root intrusion in joint.
 - 18) 139.5 feet – Junction box.
 - 19) 155.4 feet – Intruding sealing ring.
 - 20) 159.3 feet – 1.86" gap in joint; intruding sealing ring.
 - 21) 167.6 feet – 1.74" gap in joint; infiltration staining.
 - 22) 168.6 feet – Longitudinal crack in pipe.
 - 23) 175.3 feet – Missing surface concrete; visible rebar.
 - 24) 183.1 feet – Missing surface concrete; visible rebar; broken spigot.
 - 25) 210.1 feet – 1.14" gap in joint.

I-20/I-26/I-126 Corridor Improvement Project

Alignment 126P, Station 63+20

Structure EP-5102 **EP-5102**

60" RCP

Summary:

F&ME assessed the overall condition of a 60" RCP designated as EP-5102.

Observations:

- Dimensions – Verified 60" RCP. Length was not measured due to obstructions in pipe; plan length of 392 LF.
- Scan direction – Outfall to inlet.
- General notes – Joints on 6' spacing. 217 LF of pipe was assessed outfall to inlet direction. Video was terminated due to concrete blocks blocking line at I-26 median.
- Observations:
 - 26) 216.2 feet – 0.92" gap in joint.
 - 27) 222.4 feet – 0.94" gap in joint.
 - 28) 228.4 feet – 1.17" gap in joint.
 - 29) 246.6 feet – Infiltration weeping
 - 30) 252.5 feet – Infiltration weeping.
 - 31) 261.6 feet – Weeping at lifting hole.
 - 32) 261.9 feet – Inlet for catch basin.
 - 33) 264.5 feet – Infiltration weeping.
 - 34) 270.4 feet – Piece of concrete block wall in pipe; survey terminated.

Project Information

Surveyor Name	GCS	Certificate Number	U-0917-07009391
Owner	SCDOT	Customer	F&ME
Drainage Area		PO Number	
Pipe Segment Reference		Date	3/28/2019 14:53
Street	I-26	City	COLUMBIA
Comments			

Manhole

Upstream MH	EP 5102 INLET	Rim to Invert (U)	
Grade to Invert (U)		Rim to Grade (U)	
Downstream MH	EP 5102 OUTFALL	Rim to Invert (D)	
Grade to Invert (D)		Rim to Grade (D)	
Sewer Use		Direction of Survey	Upstream

Pipe

Height (Diameter)	60	Width	
Shape	Circular	Material	Reinforced Concrete Pipe
Lining Method		Pipe Joint Length	
Total Length		Length Surveyed	270.4
Year Laid		Year Renewed	

Misc

Flow Control		Media Label	DVD
Purpose		Sewer Category	
Pre-Cleaning	Not Known	Date Cleaned	
Weather		Location Code	
Additional Info		Location Details	

Custom

Number of Taps	0	Number of Roots	8
Num Cracks / Fractures	7	Number of Broken / Holes / Collapse	1
Number of Deposits	0	Custom6	
Custom7		Struct Grade	
OM Grade		Overall Grade	

Pacp 6

Reverse Setup ID		Sheet (Group) Number	
Imperial Units (US)	True	Pressure Value	
Work Order		Project	CCR PIPE
		Completed	No

Project: CCR PIPE

Date: 3/28/2019 2:53:00 PM

Street: I-26

Length Surveyed: 270.4

Pacp Quick Overall Rating:

Height (Diameter): 60

Street: I-26



Pipe Segment Reference:

Upstream MH: EP 5102 INLET

Downstream MH: EP 5102
OUTFALL

Direction of Survey: Upstream

Material: Reinforced Concrete
Pipe

Distance	Fault Observation	Time	Picture
0.0	Discharge Point Severity: None Remarks: EP 5102 OUTFALL	23	
0.0	Water Level Severity: None Percent: 5	39	
6.9	Joint Separated Large Severity: None Remarks: PIPE SEPARATED PATCH JOB Struct Weight: 2	03:13	

Distance	Fault Observation	Time	Picture
13.8	General Observation Severity: None Remarks: 0.807	07:51	
21.6	Intruding Sealing Ring Position: 11 To 11 Severity: None Percent: 5 Maint Weight: 2	10:49	
29.5	General Observation Severity: None Remarks: 1.065	13:00	

EP-5102

Distance	Fault Observation	Time	Picture
29.5	Surface Aggregate Missing Position: 12 To 9 Severity: None Joint Remarks: INNER WALL GONE REBAR VISIBLE Struct Weight: 4	14:01	
38.5	Crack Multiple Position: 5 To 8 Severity: None Joint Remarks: MUTIPLE CIRCLE CRACKS Struct Weight: 3	16:45	
45.6	Fracture Circumferential Position: 12 To 1 Severity: None Joint Remarks: REBAR VISIBL ON BELL Struct Weight: 2	18:59	

EP-5102

Distance	Fault Observation	Time	Picture
53.7	General Observation Severity: None Remarks: 0.667	21:55	
61.6	Intruding Sealing Ring Broken Position: 9 To 9 Severity: None Percent: 5 Maint Weight: 2	23:31	
61.6	Infil Weeper Position: 7 To 8 Severity: None Joint Maint Weight: 2	23:55	

EP-5102

Distance	Fault Observation	Time	Picture
61.6	Infil Weeper Position: 6 To 4 Severity: None Joint Maint Weight: 2	24:23	<p>CCr PIPE EP 5102 OUTFALL To EP 5102 INLET</p> <p>14:28 -3/-84' +7.0% +61.6ft</p>
61.6	Intruding Sealing Ring Broken Position: 2 To 3 Severity: None Percent: 5 Maint Weight: 2	25:04	<p>CCr PIPE EP 5102 OUTFALL To EP 5102 INLET</p> <p>03,28,19 11/-84' +6.9% +61.6ft</p> <p>2.22</p>
70.0	Infil Stain Position: 7 To 5 Severity: None Joint	26:42	<p>CCr PIPE EP 5102 OUTFALL To EP 5102 INLET</p> <p>03,28,19 78/-83' +6.0% +70.0ft</p> <p>1.18</p>

EP-5102

Distance	Fault Observation	Time	Picture
70.0	Roots Fine Joint Position: 5 Severity: None Joint Maint Weight: 1	27:23	
73.7	Intruding Sealing Ring Position: 10 To 11 Severity: None Percent: 5 Maint Weight: 2	28:44	
82.2	General Observation Severity: None Remarks: BLIND JUNCTION	31:06	

EP-5102

Distance	Fault Observation	Time	Picture
89.4	General Observation Severity: None Remarks: 0.439	34:50	<p>CCR PIPE EP 5102 OUTFALL To EP 5102 INLET</p> <p>03,28,19 19/-91' +3.3% +89.4ft</p>
97.5	Intruding Sealing Ring Position: 10 To 11 Severity: None Percent: 5 Maint Weight: 2	36:13	<p>CCR PIPE EP 5102 OUTFALL To EP 5102 INLET</p> <p>03,28,19 137/-87' +4.3% +97.5ft</p>
97.7	General Observation Severity: None Remarks: 1.299	37:17	<p>CCR PIPE EP 5102 OUTFALL To EP 5102 INLET</p> <p>03,28,19 166/-90' +4.2% +97.6ft</p>

EP-5102

Distance	Fault Observation	Time	Picture
105.5	Intruding Sealing Ring Position: 2 To 3 Severity: None Percent: 5 Maint Weight: 2	38:27	<p>CCR PIPE EP 5102 OUTFALL To EP 5102 INLET</p> <p>03:28.19 39/-90' +4.0% +105.4ft</p>
105.5	Roots Fine Joint Position: 7 Severity: None Joint Maint Weight: 1	39:10	<p>CCR PIPE EP 5102 OUTFALL NLET</p> <p>14:43 -137/-87' +3.9% +105.4ft</p>
114.0	Crack Circumferential Position: 7 To 8 Severity: None Joint Struct Weight: 1	41:03	<p>CCR PIPE ALL To EP 5102 INLET</p> <p>1.26</p> <p>Roots Fine Joint</p> <p>14:45 -155/-87' +5.3% +114.0ft</p>

EP-5102

Distance	Fault Observation	Time	Picture
121.8	Roots Fine Joint Position: 7 Severity: None Joint Remarks: ROOTS AND WET STAINS Maint Weight: 1	42:32	
121.8	General Observation Severity: None Remarks: 1.458	44:31	
124.9	Infil Stain Position: 3 To 4 Severity: None	43:51	

EP-5102

Distance	Fault Observation	Time	Picture
126.0	Hole Soil Visible Position: 4 Severity: None Remarks: HOLE WITH INFILTRATION AND ROOTS Struct Weight: 5	46:10	<p>CCr PIPE EP 5102 OUTFALL To EP 5102 INLET</p> <p>03,28,19 -27/-84' +5,2% +126,0ft</p>
127.3	Infil Stain Position: 3 To 4 Severity: None	47:01	<p>CCr PIPE EP 5102 OUTFALL To EP 5102 INLET</p> <p>14:50 24/-80' +5,0% +127,3ft</p>
130.1	Infil Stain Position: 7 To 5 Severity: None	46:36	<p>CCr PIPE EP 5102 OUTFALL To EP 5102 INLET</p> <p>03,28,19 147/-84' +5,1% +130,0ft</p>

EP-5102

Distance	Fault Observation	Time	Picture
130.3	Fracture Circumferential Position: 7 To 8 Severity: None Joint Struct Weight: 2	47:04	
130.3	Roots Fine Joint Position: 7 Severity: None Joint Maint Weight: 1	47:18	
130.4	Fracture Circumferential Position: 4 To 5 Severity: None Joint Struct Weight: 2	49:30	




EP-5102

Distance	Fault Observation	Time	Picture
130.4	Roots Fine Joint Position: 5 Severity: None Joint Maint Weight: 1	49:53	
130.4	General Observation Severity: None Remarks: 1.356	50:47	
132.3	Infil Stain Position: 2 To 5 Severity: None Remarks: MUTIPLE STAINS	49:44	

EP-5102

Distance	Fault Observation	Time	Picture
139.5	General Observation Severity: None Remarks: JUNCTION BOX	50:31	
155.4	Intruding Sealing Ring Position: 1 To 2 Severity: None Percent: 5 Maint Weight: 2	51:46	
159.3	Intruding Sealing Ring Position: 3 To 1 Severity: None Percent: 5 Maint Weight: 2	56:01	

EP-5102

Distance	Fault Observation	Time	Picture
167.6	General Observation Severity: None Remarks: 1.742	57:54	
167.6	Infil Stain Position: 1 To 5 Severity: None Joint	58:30	
167.6	Infil Stain Position: 7 To 11 Severity: None Joint	57:06	

EP-5102

Distance	Fault Observation	Time	Picture
168.6	Crack Multiple Position: 10 To 1 Severity: None Joint Struct Weight: 3	57:35	
175.3	Surface Aggregate Missing Position: 3 To 5 Severity: None Joint Remarks: REBAR EXPOSED Struct Weight: 4	59:29	
175.4	Infil Stain Position: 7 To 4 Severity: None Joint	1:00:17	

EP-5102

Distance	Fault Observation	Time	Picture
183.1	<p>General Observation Severity: None Remarks: REBAR SHOWING THROUGH</p>	1:01:45	<p>CCR PIPE EP 5102 OUTFALL To EP 5102 INLET</p> <p>15:10 62/-104' +4.7% +183.0ft</p>
183.1	<p>Fracture Circumferential Position: 12 To 3 Severity: None Joint Remarks: REBAR VISIBLE IN SPIGOT Struct Weight: 2</p>	1:02:27	<p>CCR PIPE EP 5102 OUTFALL To EP 5102 INLET</p> <p>15:11 105/-89' +4.7% +183.0ft</p>
183.1	<p>Roots Fine Joint Position: 8 Severity: None Joint Maint Weight: 1</p>	1:03:02	<p>CCR PIPE EP 5102 OUTFALL To EP 5102 INLET</p> <p>15:12 -154/-85' +4.7% +183.0ft</p>

EP-5102

Distance	Fault Observation	Time	Picture
188.1	Roots Fine Joint Position: 7 Severity: None Joint Maint Weight: 1	1:05:54	
191.8	Infil Stain Position: 7 To 5 Severity: None Joint	1:09:03	
210.1	General Observation Severity: None Remarks: 1.139	1:14:48	

EP-5102

Distance	Fault Observation	Time	Picture
216.2	General Observation Severity: None Remarks: 0.924	1:16:55	
222.4	General Observation Severity: None Remarks: 0.938	1:19:03	
228.4	General Observation Severity: None Remarks: 1.171	1:20:51	

EP-5102

Distance	Fault Observation	Time	Picture
234.6	Roots Fine Joint Position: 4 Severity: None Joint Maint Weight: 1	1:22:18	<p>CCP PIPE EP 5102 OUTFALL To EP 5102 INLET</p> <p>03,28,19 -26/-89' +7.2% +234.5ft</p>
240.9	Infil Stain Position: 7 To 10 Severity: None Joint	1:24:05	<p>CCP PIPE EP 5102 OUTFALL To EP 5102 INLET</p> <p>15:33 139/-90' +6.5% +240.8ft</p>
246.6	Infil Weeper Position: 7 Severity: None Joint Maint Weight: 2	1:25:22	<p>CCP PIPE EP 5102 OUTFALL To EP 5102 INLET</p> <p>03,28,19 -141/-90' +5.9% +246.5ft</p>

EP-5102

Distance	Fault Observation	Time	Picture
246.6	Infil Stain Position: 2 To 5 Severity: None Joint	1:26:34	<p>CCr PIPE EP 5102 OUTFALL To EP 5102 INLET</p> <p>03,28,19 20/-89' +5,9% +246,5ft</p>
252.5	Infil Weeper Position: 4 Severity: None Joint Maint Weight: 2	1:27:31	<p>C To EP 5102 INLET</p>
258.6	Infil Stain Position: 7 To 5 Severity: None Joint	1:29:43	<p>CCr PIPE EP 5102 OUTFALL To EP 5102 INLET</p> <p>15:39 129/-87' +6,4% +258,5ft</p>

EP-5102

Distance	Fault Observation	Time	Picture
261.6	Infil Weeper Position: 10 Severity: None Remarks: WEEPING AT LIFTING HOLE Maint Weight: 2	1:31:31	
261.9	General Observation Severity: None Remarks: INLET PORT FOR CATCH BASIN	1:32:31	
264.5	Infil Weeper Position: 7 To 5 Severity: None Joint Maint Weight: 2	1:33:43	

EP-5102

Distance	Fault Observation	Time	Picture
268.0	Obstacle Other Position: 2 To 7 Severity: None Percent: 50 Remarks: CONCRETE BLOCK Maint Weight: 5	1:35:54	
270.4	Abandoned Survey Severity: None Remarks: PIECE OF BLOCK WALL	1:35:48	

Created with the  report generator

EP-5102

Project: CCR PIPE

Date: 3/28/2019 2:53:00 PM

Street: I-26

Length Surveyed: 270.4

Pacp Quick Overall Rating:

Height (Diameter): 60

Street: I-26

Pipe Segment Reference:

Upstream MH: EP 5102 INLET

Downstream MH: EP 5102

OUTFALL

Direction of Survey: Upstream

Material: Reinforced Concrete
Pipe

EP-5102

ID Number: EP 5102 OUTFALL

(0.0) ADP - Discharge Point Remark: EP 5102
OUTFALL

(0.0) MWL - Water Level

(6.9) JSL - Joint Separated Large Remark: PIPE
SEPARATED PATCH JOB

(13.8) MGO - General Observation Remark: 0.807

(21.6) ISSR - Intruding Sealing Ring - Position: 11
To 11

(29.5) MGO - General Observation Remark: 1.065

(29.5) SAM - Surface Aggregate Missing -
Position: 12 To 9 Remark: INNER WALL GONE
REBAR VISIBLE

(38.5) CM - Crack Multiple - Position: 5 To 8
Remark: MUTIPLE CIRCLE CRACKS

(45.6) FC - Fracture Circumferential - Position: 12
To 1 Remark: REBAR VISIBL ON BELL

(53.7) MGO - General Observation Remark: 0.667

(61.6) ISSRB - Intruding Sealing Ring Broken -
Position: 9 To 9

(61.6) IW - Infil Weeper - Position: 7 To 8

(61.6) IW - Infil Weeper - Position: 6 To 4

(61.6) ISSRB - Intruding Sealing Ring Broken -
Position: 2 To 3

(70.0) IS - Infil Stain - Position: 7 To 5

(70.0) RFJ - Roots Fine Joint - Position: 5

(73.7) ISSR - Intruding Sealing Ring - Position: 10
To 11

(82.2) MGO - General Observation Remark:
BLIND JUNCTION
































(89.4) MGO - General Observation Remark: 0.439

(97.5) ISSR - Intruding Sealing Ring - Position: 10
To 11

(97.7) MGO - General Observation Remark: 1.299

(105.5) ISSR - Intruding Sealing Ring - Position: 2
To 3

EP-5102

		(105.5) RFJ - Roots Fine Joint - Position: 7
		(114.0) CC - Crack Circumferential - Position: 7 To 8
		(121.8) RFJ - Roots Fine Joint - Position: 7 Remark: ROOTS AND WET STAINS
(121.8) MGO - General Observation Remark: 1.458		
(124.9) IS - Infil Stain - Position: 3 To 4		
(126.0) HSV - Hole Soil Visible - Position: 4 Remark: HOLE WITH INFILTRATION AND ROOTS		
(127.3) IS - Infil Stain - Position: 3 To 4		
		(130.1) IS - Infil Stain - Position: 7 To 5
		(130.3) FC - Fracture Circumferential - Position: 7 To 8
(130.4) FC - Fracture Circumferential - Position: 4 To 5		(130.3) RFJ - Roots Fine Joint - Position: 7
(130.4) RFJ - Roots Fine Joint - Position: 5		
(130.4) MGO - General Observation Remark: 1.356		
(132.3) IS - Infil Stain - Position: 2 To 5 Remark: MUTIPLE STAINS		
		
(139.5) MGO - General Observation Remark: JUNCTION BOX		
(155.4) ISSR - Intruding Sealing Ring - Position: 1 To 2		
(159.3) ISSR - Intruding Sealing Ring - Position: 3 To 1		
		
(167.6) MGO - General Observation Remark: 1.742		
(167.6) IS - Infil Stain - Position: 1 To 5		(167.6) IS - Infil Stain - Position: 7 To 11
		(168.6) CM - Crack Multiple - Position: 10 To 1
(175.3) SAM - Surface Aggregate Missing - Position: 3 To 5 Remark: REBAR EXPOSED		
(183.1) MGO - General Observation Remark: REBAR SHOWING THROUGH		(175.4) IS - Infil Stain - Position: 7 To 4
(183.1) FC - Fracture Circumferential - Position: 12 To 3 Remark: REBAR VISIBLE IN SPIGOT		
		(183.1) RFJ - Roots Fine Joint - Position: 8
		(188.1) RFJ - Roots Fine Joint - Position: 7
		
		
		
		
		(191.8) IS - Infil Stain - Position: 7 To 5

Project: CCR PIPE

Date: 3/28/2019 2:53:00 PM

Street: I-26

Length Surveyed: 270.4

Pacp Quick Overall Rating:

Height (Diameter): 60

Street: I-26

Pipe Segment Reference:

Upstream MH: EP 5102 INLET

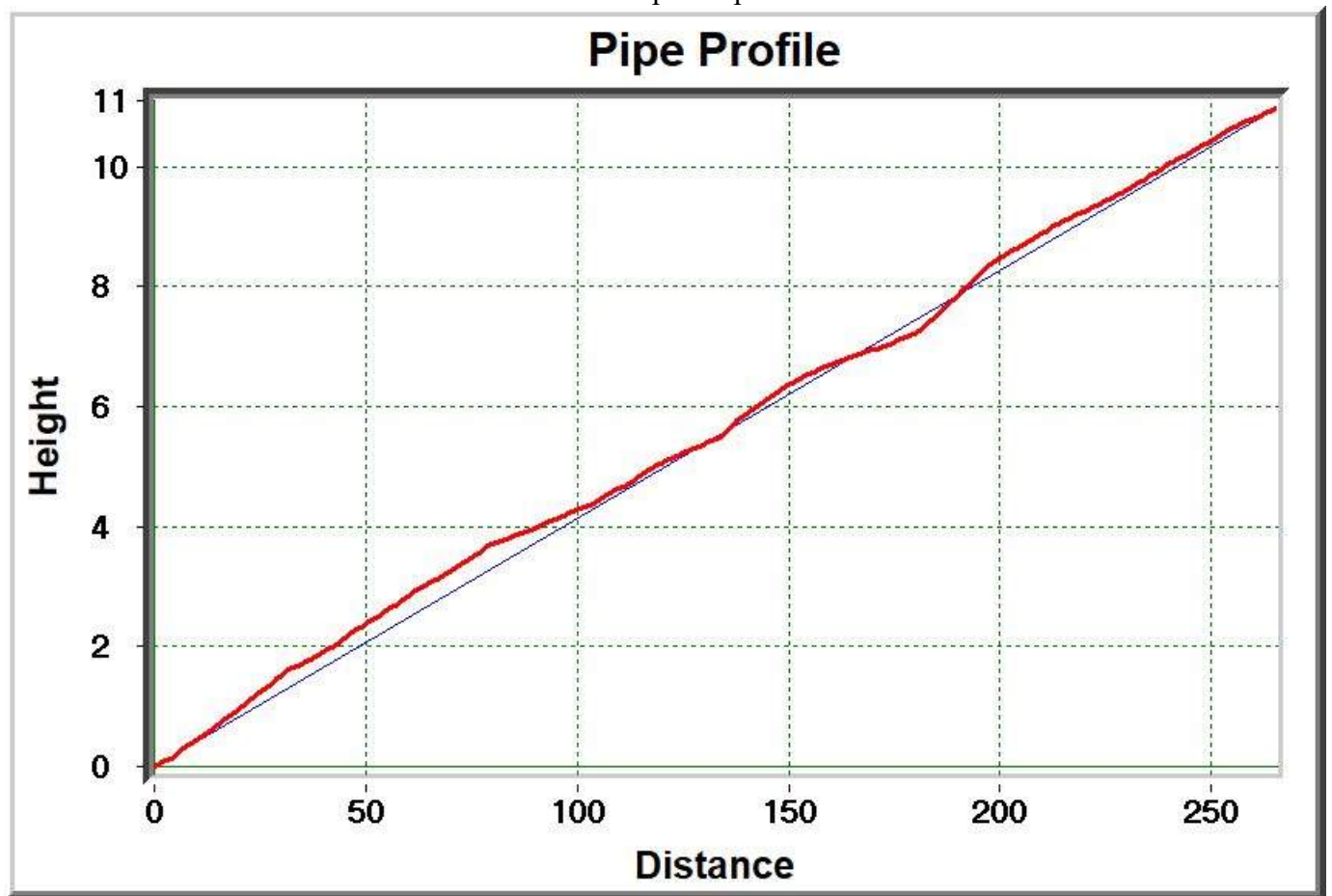
Downstream MH: EP 5102
OUTFALL

EP-5102

Direction of Survey: Upstream

Material: Reinforced Concrete
Pipe

Percent Grade Mean: 4.07
Plot Distance From: 0 To 271
Max Percent Difference: 3
Number of Window Values: 1
Percent Difference Max for Windows Values: 60
Number of Feet to Average: 1
Final number of points plotted: 231



Created with the  report generator

I-20/I-26/I-126 Corridor Improvement Project

Alignment 126P, Station 63+20

Structure EP-5102

EP-5102

60" RCP

Summary:

F&ME assessed the overall condition of a 60" RCP designated as EP-5102.

Observations:

- Dimensions – Verified 60" RCP. Length was not measured due to obstructions in pipe; plan length of 392 LF.
- Scan direction – Inlet to outfall.
- General notes – Joints on 6' spacing. 73 LF of pipe was assessed inlet to outfall direction. Video was terminated due to concrete blocks blocking line at I-26 median.
- Observations:
 - 1) 9.4 feet – 0.65" gap in joint.
 - 2) 21.8 feet – 0.54" gap in joint; fine root infiltration in joint.
 - 3) 27.4 feet – 0.50" gap in joint.
 - 4) 33.6 feet – 1.06" gap in joint.
 - 5) 39.6 feet – 0.63" gap in joint; fine root infiltration in joint.
 - 6) 45.6 feet – 0.38" gap in joint.
 - 7) 51.5 feet – Catch basin built into top of pipe.
 - 8) 58.6 feet – 0.61" gap in joint; fine root infiltration in joint.
 - 9) 69.8 feet – 0.86" gap in joint.
 - 10) 73.2 feet – Survey abandoned due to debris in pipe.

Project Information

Surveyor Name	GCS	Certificate Number	U-0917-07009391
Owner	SCDOT	Customer	F&ME
Drainage Area		PO Number	
Pipe Segment Reference		Date	4/1/2019 07:39
Street	I-26	City	COLUMBIA
Comments			

Manhole

Upstream MH	EP 5102 INLET	Rim to Invert (U)	
Grade to Invert (U)		Rim to Grade (U)	
Downstream MH	EP 5102 OUTLET	Rim to Invert (D)	EP-5102
Grade to Invert (D)		Rim to Grade (D)	
Sewer Use		Direction of Survey	Downstream

Pipe

Height (Diameter)	60	Width	
Shape	Circular	Material	Reinforced Concrete Pipe
Lining Method		Pipe Joint Length	
Total Length		Length Surveyed	73.2
Year Laid		Year Renewed	

Misc

Flow Control		Media Label	DVD
Purpose		Sewer Category	
Pre-Cleaning	Not Known	Date Cleaned	
Weather		Location Code	
Additional Info		Location Details	

Custom

Number of Taps	0	Number of Roots	4
Num Cracks / Fractures	0	Number of Broken / Holes / Collapse	0
Number of Deposits	0	Custom6	
Custom7		Struct Grade	
OM Grade		Overall Grade	

Pacp 6

Reverse Setup ID		Sheet (Group) Number	
Imperial Units (US)	True	Pressure Value	
Work Order		Project	CCR PIPE
		Completed	No

Project: CCR PIPE

Date: 4/1/2019 7:39:00 AM

Street: I-26

Length Surveyed: 73.2

Pacp Quick Overall Rating: 3114

Height (Diameter): 60

Street: I-26

Pipe Segment Reference:

Upstream MH: EP 5102 INLET

Downstream MH: EP 5102

OUTLET

Direction of Survey: Downstream

Material: Reinforced Concrete Pipe

EP-5102

Distance	Fault Observation	Time	Picture
0.0	Junction Box Severity: None Remarks: EP 5102 INLET	32	
0.0	Water Level Severity: None Percent: 10	45	
9.4	General Observation Severity: None Remarks: 0.653	07:23	

Distance	Fault Observation	Time	Picture
21.8	Roots Fine Joint Position: 5 Severity: None Joint Maint Weight: 1	11:54	
21.8	General Observation Severity: None Remarks: 0.536	13:21	
27.4	General Observation Severity: None Remarks: 0.498	15:55	

EP-5102

Distance	Fault Observation	Time	Picture
33.6	General Observation Severity: None Remarks: 1.063	18:24	
39.6	Roots Fine Joint Position: 5 Severity: None Joint Maint Weight: 1	20:38	
39.6	General Observation Severity: None Remarks: 0.63	21:40	

EP-5102

Distance	Fault Observation	Time	Picture
45.6	General Observation Severity: None Remarks: 0.382	24:47	
51.5	General Observation Severity: None Remarks: CATCH BASIN BUILT INTO TOP OF PIPE	26:43	
58.6	Roots Fine Joint Position: 7 Severity: None Joint Maint Weight: 1	29:37	

EP-5102

Distance	Fault Observation	Time	Picture
58.6	Roots Fine Joint Position: 4 Severity: None Joint Maint Weight: 1	30:04	
58.6	General Observation Severity: None Remarks: 0.61	30:47	
69.8	General Observation Severity: None Remarks: 0.864	37:37	

EP-5102

Distance	Fault Observation	Time	Picture
71.6	Obstacle Other Position: 5 To 7 Severity: None Percent: 15 Remarks: CONCRETE BLOCK ROCK ET IN PIPE Maint Weight: 3	38:39	
73.2	General Observation Severity: None Remarks: DEBRIS NOTED FROM PREVIOUS SURVEY	40:51	
73.2	Abandoned Survey Severity: None Remarks: DEBRIS	42:09	

Created with the  report generator

EP-5102

Project: CCR PIPE

Date: 4/1/2019 7:39:00 AM

Street: I-26

Length Surveyed: 73.2

Pacp Quick Overall Rating: 3114

Height (Diameter): 60

Street: I-26

Pipe Segment Reference:

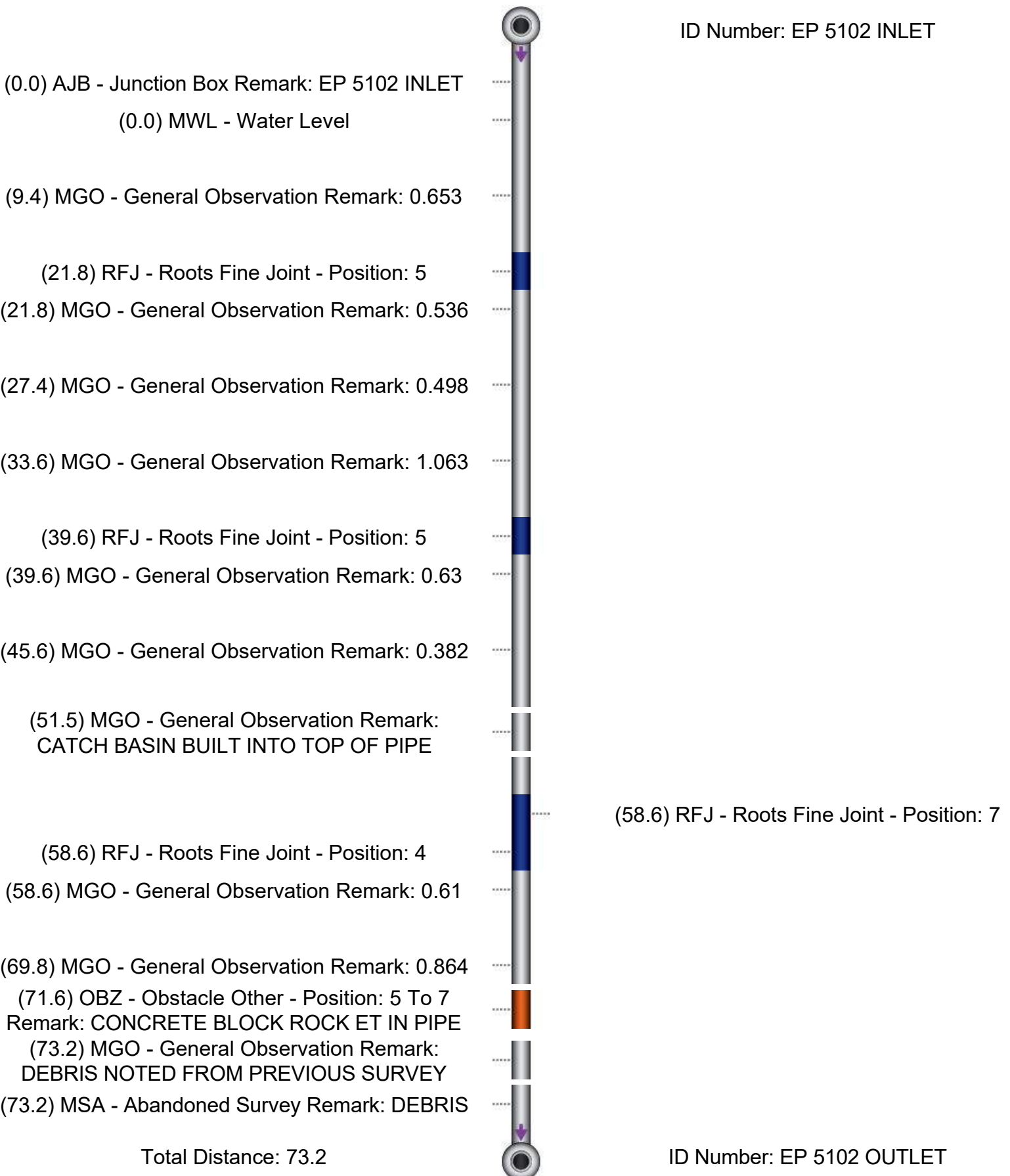
Upstream MH: EP 5102 INLET

Downstream MH: EP 5102
OUTLET

EP-5102

Direction of Survey: Downstream

Material: Reinforced Concrete Pipe



Project: CCR PIPE

Date: 4/1/2019 7:39:00 AM

Street: I-26

Length Surveyed: 73.2

Pacp Quick Overall Rating: 3114

Height (Diameter): 60

Street: I-26

Pipe Segment Reference:

Upstream MH: EP 5102 INLET

Downstream MH: EP 5102

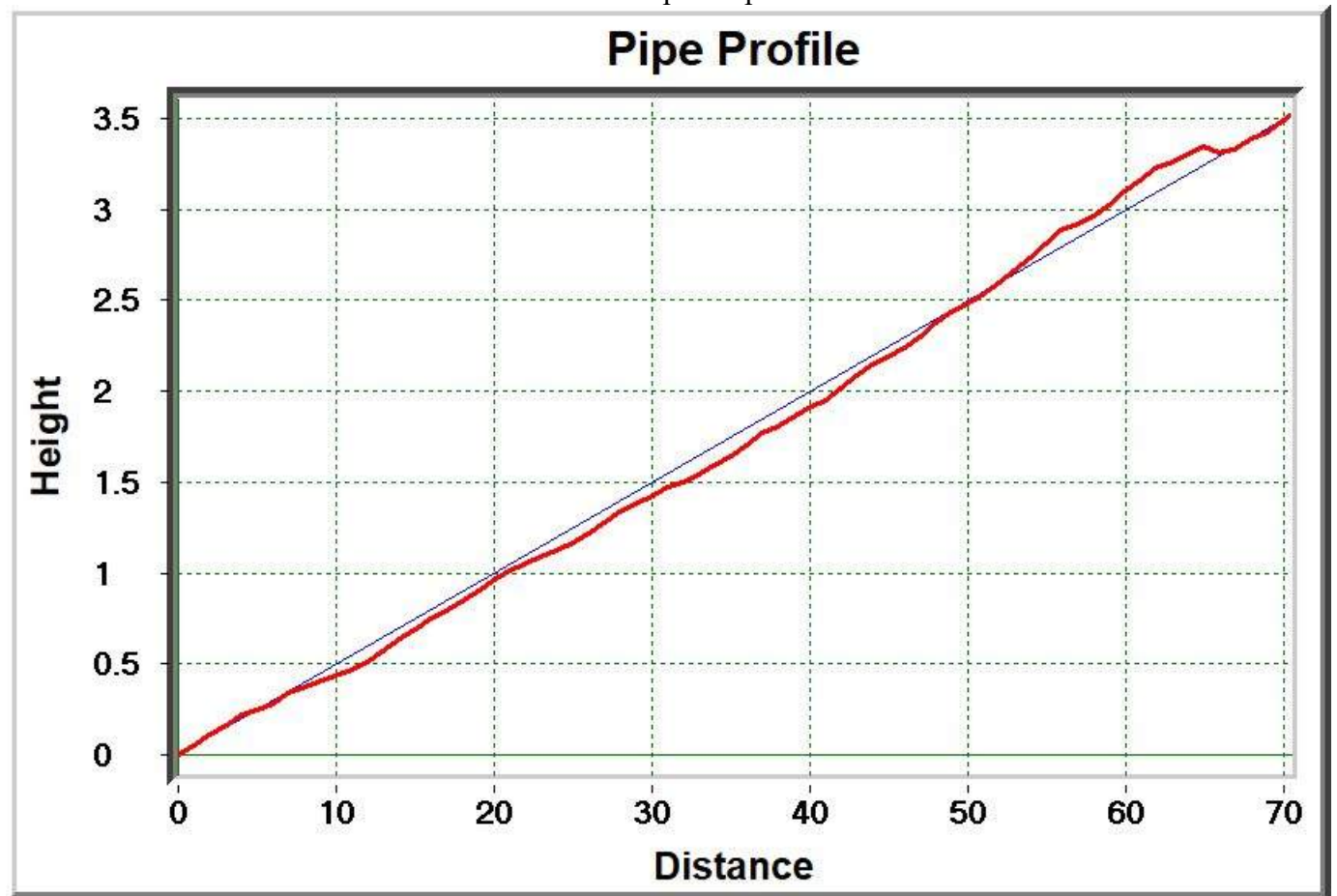
OUTLET

EP-5102

Direction of Survey: Downstream

Material: Reinforced Concrete Pipe

Percent Grade Mean: 5.04
Plot Distance From: 0 To 74
Max Percent Difference: 3
Number of Window Values: 1
Percent Difference Max for Windows Values: 60
Number of Feet to Average: 1
Final number of points plotted: 66



Created with the  report generator