

Alaska Department of Transportation and Public Facilities Central Region



NHS STORM DRAIN INSPECTION CONDITION REPORT PROJECT NO. 0A31055 / Z591280000

Dimond Boulevard from Jewel Lake Road to Old Seward Highway
Muldoon Road from Boundary Avenue to Northern Lights Boulevard
Debarr Road from Bragaw Street to Muldoon Road
Downtown: 5th and 6th Avenue from Gambell Street to Orca Street and
Ingra Street from 6th Avenue to 9th Avenue

May 20th, 2019

Prepared By:

Stephl Engineering LLC
3900 Arctic Blvd., Suite 204
Anchorage, AK 99503
907.562.1468

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PURPOSE AND BACKGROUND

This report presents the results of pipe inspections and manhole (structure) inspections on the storm pipes that are located under highways owned and maintained by the Alaska Department of Transportation and Public Facilities (AKDOT&PF). The work was completed by Stephl Engineering LLC and Construction Unlimited Inc. (CUI). The data developed in this report will be incorporated into the GIS database (Geographic Information System) that is operated by the AKDOT&PF.

In 2016 and 2017, storm drain pipe inspections were completed in six highway corridors. Results for these inspections can be found in Stephl Engineering's 2018 NHS Storm Drain Inspection Condition and Repair Recommendation reports. In 2018, inspections were completed in four additional corridors. Supplementary inspections on Dimond Blvd were also completed. The locations are shown in Figure No. 1. Storm drain pipes and structures that have been inspected to date (as of November 2018) are located in the following areas:

2016 and 2017 Inspection Areas

- A Street from 36th Avenue to Fireweed Lane
- Old Seward Highway from International Airport Road to 48th Avenue
- International Airport Road from Cambridge Way to Old Seward Highway
- Dimond Boulevard from Jewel Lake Road to Old Seward Highway
- Minnesota Drive from Tudor Road to Hillcrest Drive
- C Street from Dimond to 76th and Tudor to 40th

2018 Inspection Areas

- Supplementary inspections on Dimond Blvd.
- Debarr Road from Bragaw Street to Muldoon Road
- Muldoon Road from Boundary Avenue to Northern Lights Blvd.
- 5th and 6th Avenue from Gambell Street to Orca Street
- Ingra Street from 6th Avenue to 8th Avenue

The total length of storm drain pipe inspected in 2018 is approximately 30,500 feet. There are 252 storm-drain pipe segments contained in the pipes that were inspected. The total number of manholes (structures) inspected is approximately 83. The total length of inspected pipe for the entire project is approximately 63,900 LF, including 479 storm-drain pipe segments and 226 manholes (structures).

The 2018 Dimond Blvd. inspections were done to inspect pipes and structures that were missed during the 2017 inspections on Dimond. These included pipes/manholes at the Jewel Lake Road intersection, between Campbell Creek and Dimond Fred Meyer, and between Schoon Street and Old Seward Highway.

In this report, the following information is provided for each of the highway corridors where inspections were performed.

- Storm Drain System Maps
- CCTV Data Summary and Inspection Logs
- Storm Drain Structure Summary and Inspection Reports

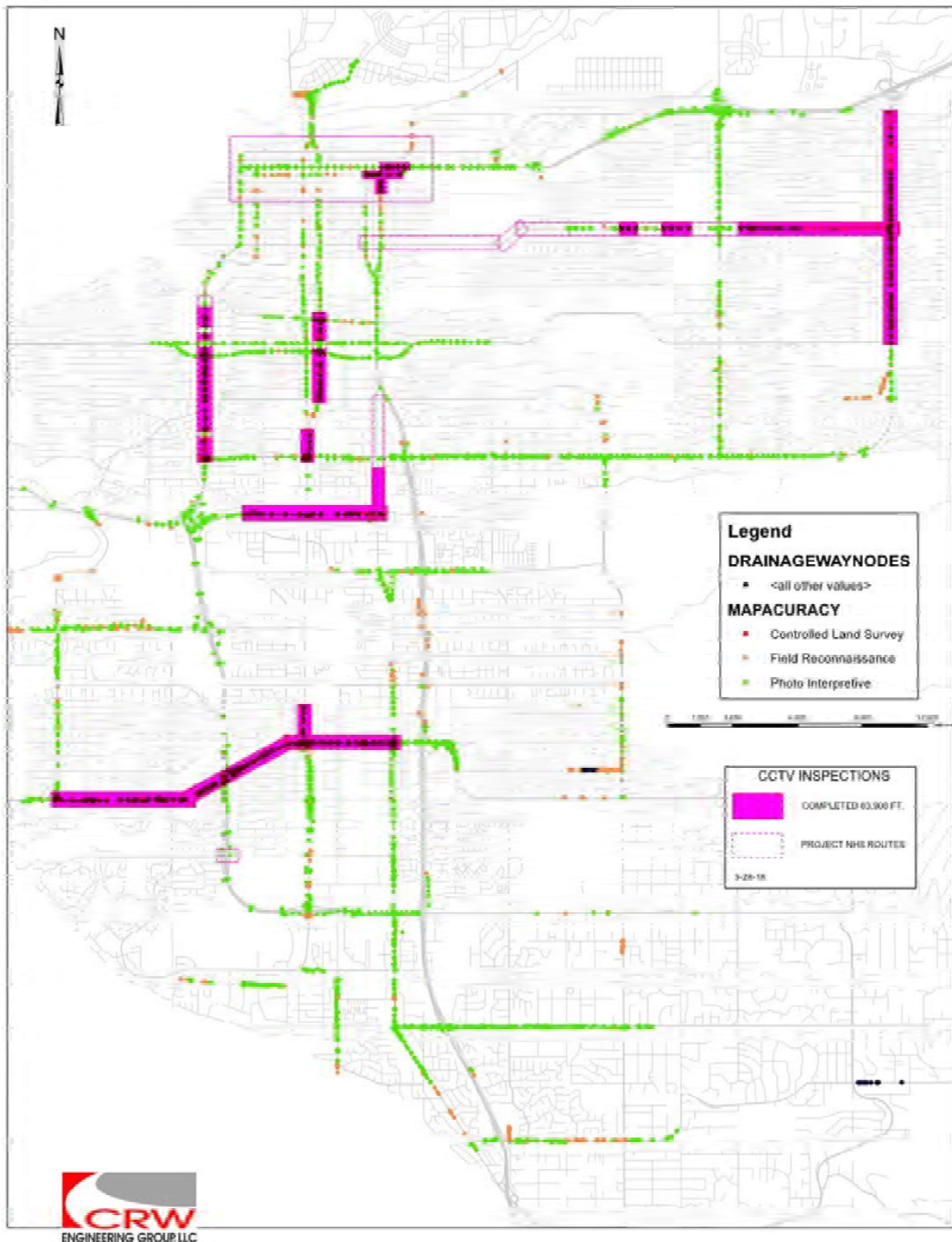


Figure No. 1

- CCTV Inspection Videos in Digital Storage Device (attached separately)

Recommendations and estimated costs for upgrades on storm drain pipes with observed defects is contained in a separately bound report.

PIPE INSPECTION

Procedure

The CCTV inspection work was completed by CUI staff using a Cues color “pan and tilt” camera. The camera, mounted on self-propelled rubber wheels, was lowered into storm drain structures and driven through the pipes. The camera was stopped when necessary to document pipe defects. In some cases, CUI would clean the storm drain pipe with their jetter truck if there was too much debris in the pipe for the camera to pass. Upon completion, the CCTV inspection video data was converted to an electronic digital file and written logs were prepared as well. The CCTV inspection of storm drains was limited to the visual observations of the interior of the pipe only. External inspections of the pipe wall were not performed during the field work.

The pipe inspection field effort focused on the larger diameter main line storm drain pipes. These pipes were considered as more critical assets for the following reasons: 1) they are generally buried deeper below the surface, 2) they convey more storm flow, 3) they were found to contain more defects, and 4) usually the consequence of a failure was higher. In some cases, larger mainline pipes may not have been inspected due to 1) lack of access, 2) a high volume of debris that would not allow the camera to pass, or 3) traffic control or lane closure limitations in the highway.

When possible, the smaller diameter storm drain leads that convey water from curb inlets to the main were also inspected. In some cases, storm drain leads were not inspected. They are generally at shallower depths, were found to be in better condition and were considered as less critical assets. Secondly, they were time consuming to inspect. This was often due to the need to change the traffic controls and lane closure locations as well as reconfigure the CCTV camera setup to inspect the smaller diameter pipes.

Physical inspections were made in selected metal pipes to determine if metal loss or corrosion was occurring. Metal loss in pipe inverts is a common occurrence in storm pipes in Anchorage. Often the inverts cannot be observed with the CCTV camera due to debris or water. Physical inspections are used to supplement the camera inspection work. On this project, physical inspections were performed by entering manholes and inspecting the pipe wall conditions near the manhole.

*CCTV Camera Preparing for Inspection**CCTV Camera Performing Inspection*

“Probing” was done on selected pipes to determine the condition of the metal. This was accomplished by tapping or pounding on the pipe wall with a hammer and/or metal spike. A pinging sound indicates the metal is firm. A thud sound or penetration of the spike through the pipe wall indicates metal loss or missing metal. The difference in the sound when probing good metal on the sidewall versus weak metal in the invert is an indication of metal loss. In most cases, weak metal observed in the pipes near the manhole usually represents the condition throughout the rest of the pipe. Probing along the pipe wall from one end of a pipe to the other end was not performed on this project.

Some pipe inspections were completed using a QuickView “zoom camera”. A zoom camera is a hand-held, pole-mounted camera that is lowered into the storm drain structure. The zoom camera can observe between 10 to 70 feet of pipe from the manhole, depending on existing pipe condition, slope and pipe diameter. Below are some example images of the QuickView zoom camera in operation. In some instances, pipe segments were short enough to be examined visually and photographed with a digital camera.

*Zoom Camera at Work**Zoom Camera Image*

The pipe summary tables show the pipes inspected by use of the zoom camera. The resulting videos are separately attached. The QuickView zoom camera was used primarily to inspect the smaller 12-inch diameter pipes that could be observed from both ends.

The defects observed, and the overall condition of the pipe, were given a numeric score. This process expands on the National Association of Sewer Service Companies (NASSCO) Pipeline Assessment and Certification Program (PACP). The observation and defect scores are given a value between 0 and 5. The score values are similar to the PACP code scoring.

Score	Example Defect
0 = no defect.....	N/A
1 = minor defect.....	small pinhole, single corrosion spot
2 = minor to moderate defect.....	surface corrosion, single leaking joint
3 = moderate defect.....	offset joint, corroded joints, small hole
4 = significant defect.....	separated joint, significant corrosion holes, failing pipe wall, other holes
5 = most significant defect.....	collapsed pipe, soil entering pipe

Condition Summary

System-wide significant deficiencies and/or defects found in the storm pipes during the inspection work included:

- Corrosion in metal pipes
- Inverts in metal pipes corroded including some metal loss and structural failure
- Debris accumulation
- Deformation of the pipe wall
- Separated joints

The inspection length for each highway corridor is shown in the table below:

NHS Highway Corridor	CCTV Inspection Completed (ft)	QuickView/Manual Inspection Completed (ft)
Dimond Boulevard from Jewel Lake Road to Old Seward Highway	4,900	181
Debarr Road from Bragaw Street to Muldoon Road	9,879	177
Muldoon Road from Boundary Ave. to Northern Lights Blvd.	11,199	38
Downtown: 5 th and 6 th Ave. Gambell Street to Orca Street	3469	22
Downtown: Ingra Street, 6 th Avenue to 8 th Avenue	1075	0

STRUCTURE INSPECTION

Procedure

Storm drain structures were inspected by Stephl Engineering staff. The structures that were inspected were chosen based on their immediate accessibility during CCTV pipe inspections, and structures within traffic control areas were also inspected. Storm drain structure characteristics, including material of construction, pipe connection condition, general condition of components, and any defects, were identified and recorded on written logs. These logs are accompanied with structure photographs in this report.

Defects and the overall condition of the structures were scored (between 0 and 5) according to the following grades:

<u>Score</u>	<u>Example Defect</u>
0 = no defect.....	N/A
1 = minor defect.....	rough surface, surface corrosion on rungs
2 = minor to moderate defect.....	spalling concrete, offset frame, corrosion on end treatment
3 = moderate defect.....	damaged concrete, damaged pipe, missing end treatment
4 = significant defect.....	broken concrete, soil visible, collapsed pipe
5 = most significant defect.....	collapsing structure with ground settlement, unable to access structure

Condition Summary

All of the manholes and catch-basins inspected are made of pre-cast concrete. Overall inspection results showed that none of the inspected manholes had a risk of serious structural collapse.

System-wide significant deficiencies and/or defects found in structures during the inspection work included:

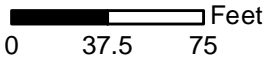
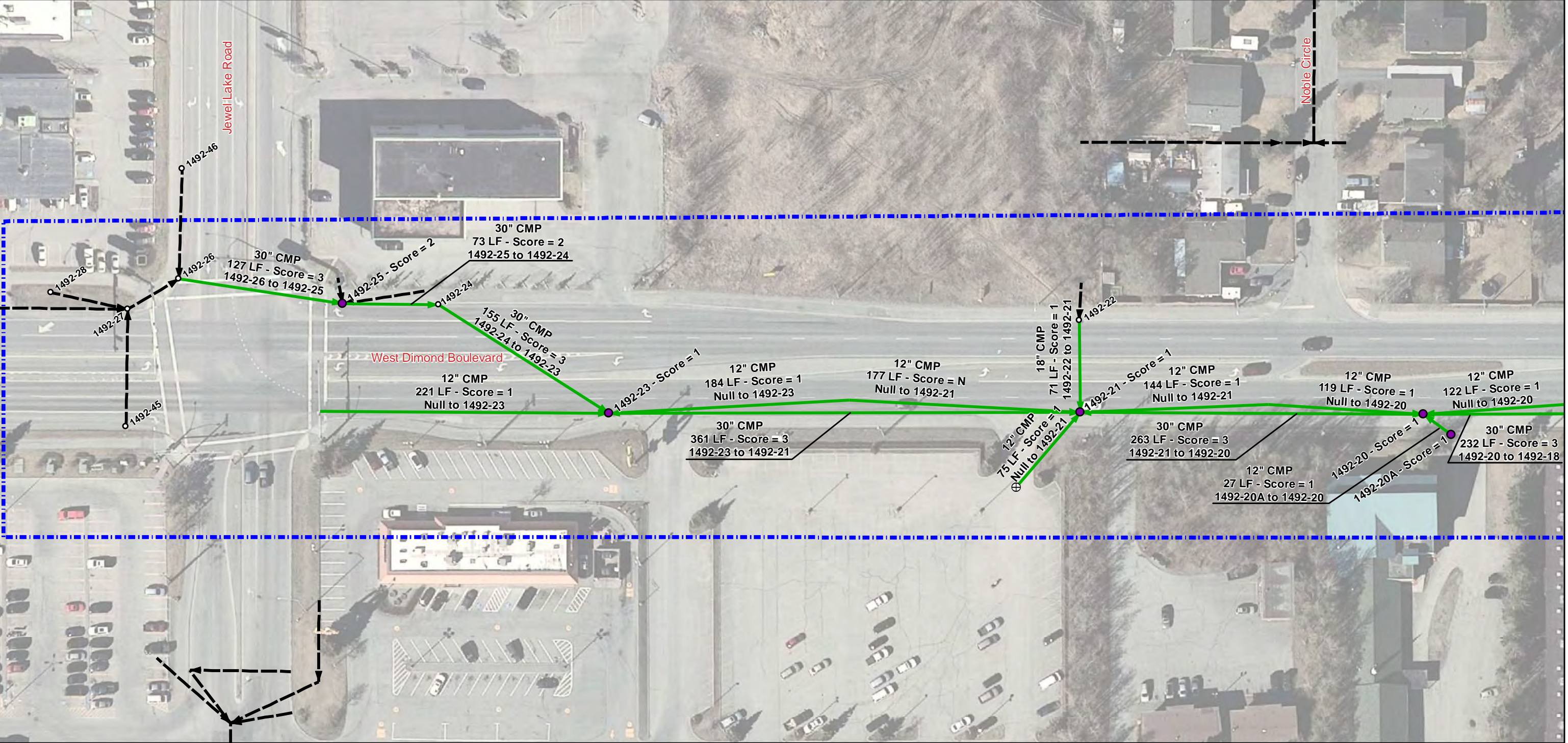
- Cracks in concrete structures and components
- Missing grout
- Broken manhole parts

Corridor	Manholes Inspected
Dimond Boulevard from Jewel Lake Road to Old Seward Highway	11
Debarr Road from Bragaw Street to Muldoon Road	25
Muldoon Road from Boundary Ave. to Northern Lights Blvd.	33
Downtown: 5 th and 6 th Ave. Gambell Street to Orca Street	12
Downtown: Ingra Street, 6 th Avenue to 8 th Avenue	2
TOTAL	83

**Dimond Blvd. from
Jewel Lake Road to Old Seward Highway**

Storm Drain System Maps

West Dimond Boulevard: Jewel Lake Road to Old Seward Highway



Legend

⊕ Not Located

Manhole/Catchbasin

- Not Inspected
- Inspected without Score
- Inspected with Score

Pipe Segment

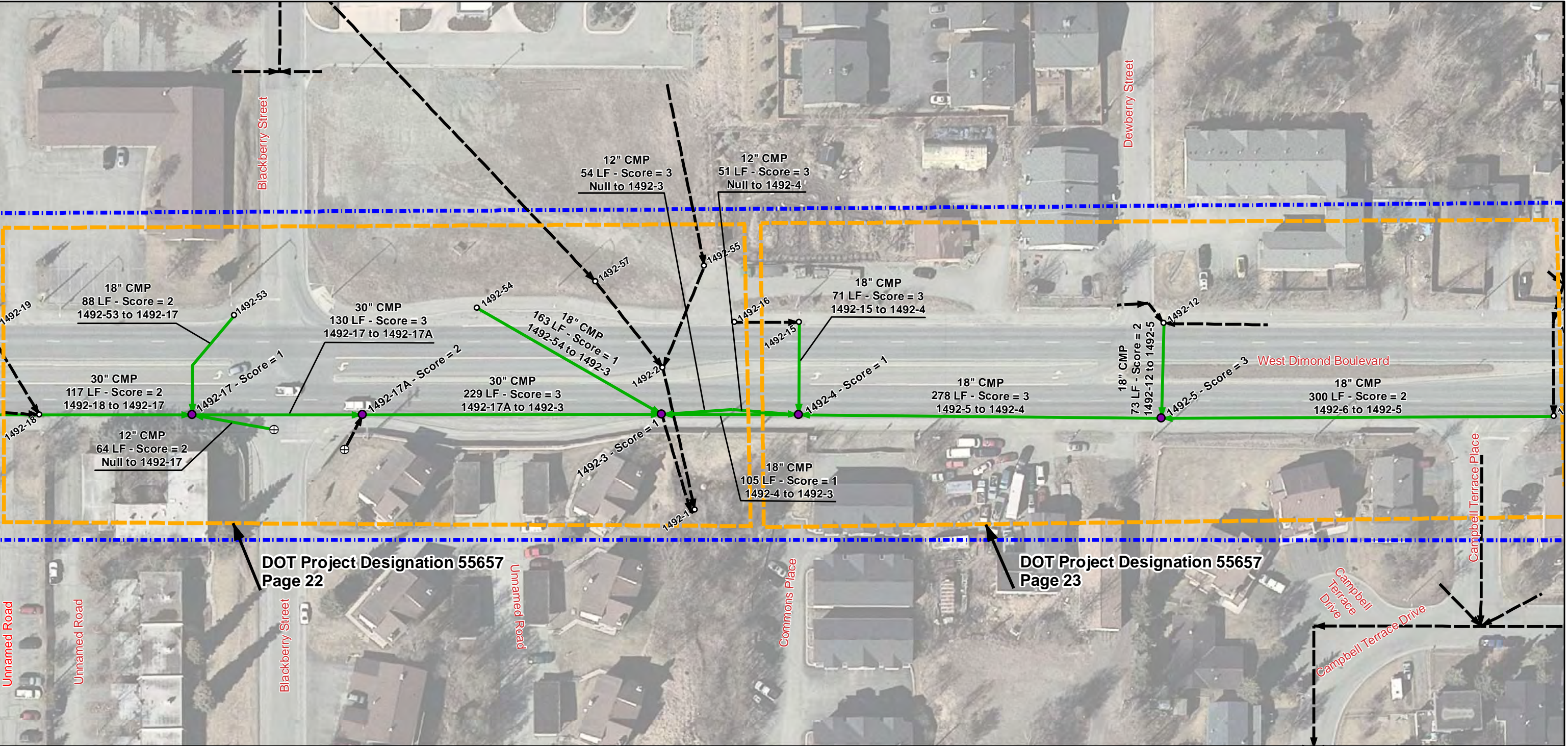
- ▶ Not Inspected
- Inspected with Score

Score

- 0 - No Defect
- 1 - Minor Defect
- 2 - Minor to Moderate Defect
- 3 - Moderate Defect
- 4 - Significant Defect
- 5 - Most Significant Defect



West Dimond Boulevard: Jewel Lake Road to Old Seward Highway



0 37.5 75 Feet

Legend

⊕ Not Located

Manhole/Catchbasin

○ Not Inspected

● Inspected without Score

● Inspected with Score

Pipe Segment

---> Not Inspected

→ Inspected with Score

Score

0 - No Defect

1 - Minor Defect

2 - Minor to Moderate Defect

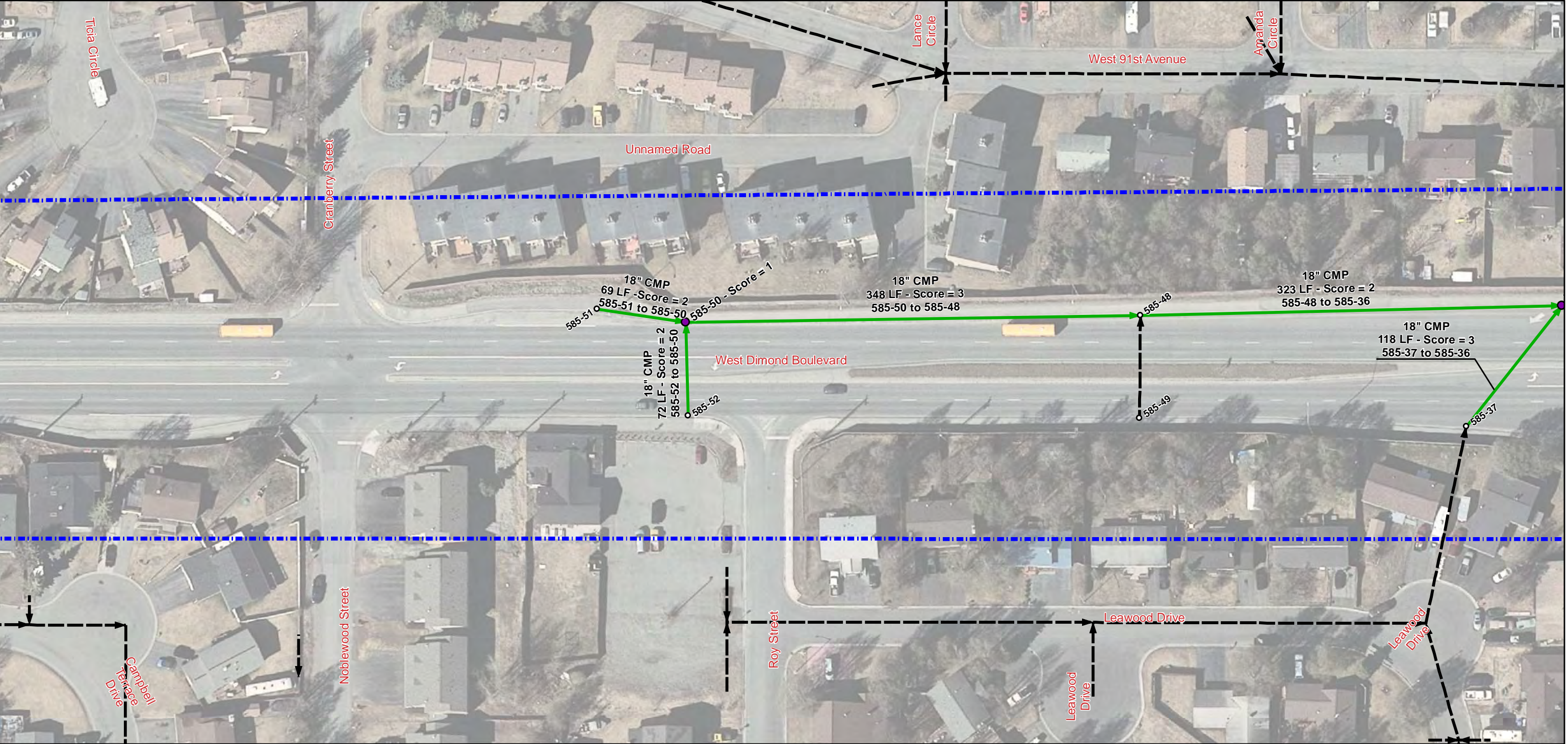
3 - Moderate Defect

4 - Significant Defect

5 - Most Significant Defect



West Dimond Boulevard: Jewel Lake Road to Old Seward Highway



0 37.5 75 Feet

Legend

⊕ Not Located

Manhole/Catchbasin

○ Not Inspected

● Inspected without Score

● Inspected with Score

Pipe Segment

---> Not Inspected

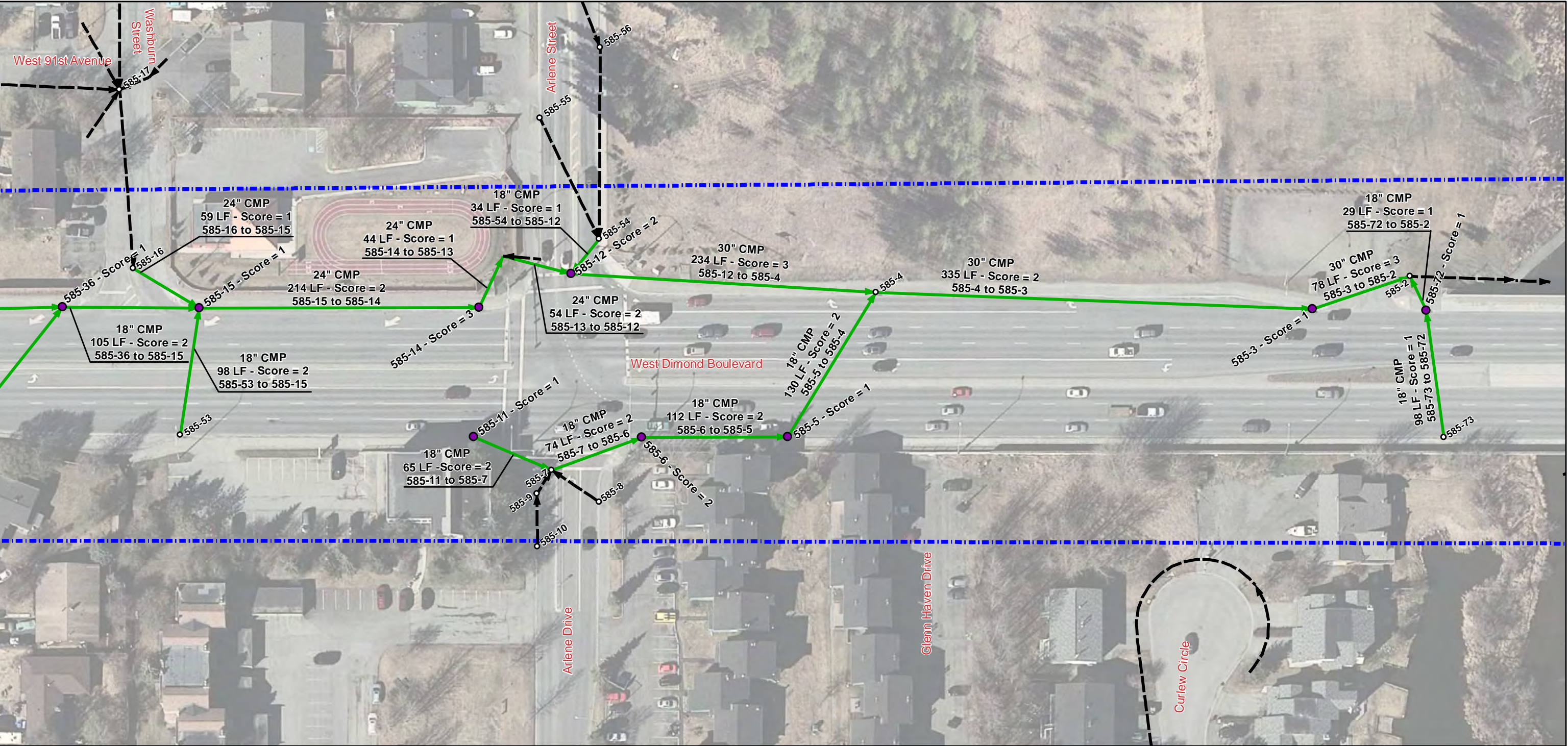
→ Inspected with Score

Score

- 0 - No Defect
- 1 - Minor Defect
- 2 - Minor to Moderate Defect
- 3 - Moderate Defect
- 4 - Significant Defect
- 5 - Most Significant Defect



West Dimond Boulevard: Jewel Lake Road to Old Seward Highway



0 37.5 75 Feet

Legend

⊕ Not Located

Manhole/Catchbasin

○ Not Inspected

● Inspected without Score

● Inspected with Score

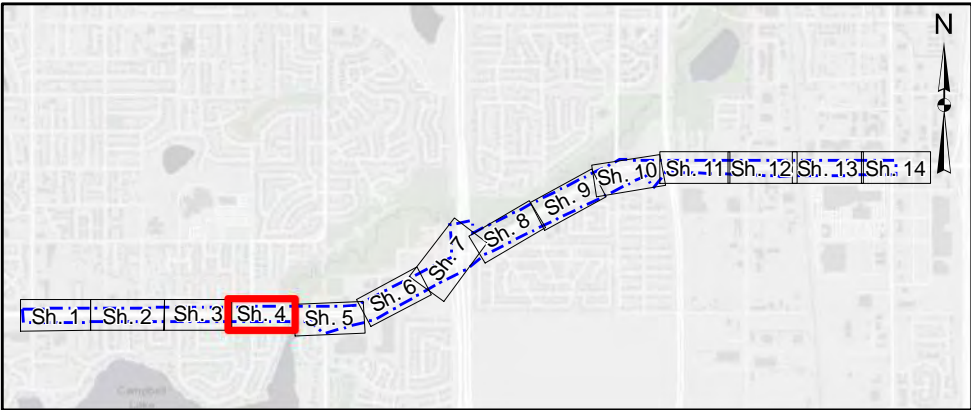
Pipe Segment

--- Not Inspected

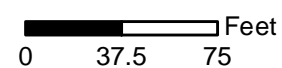
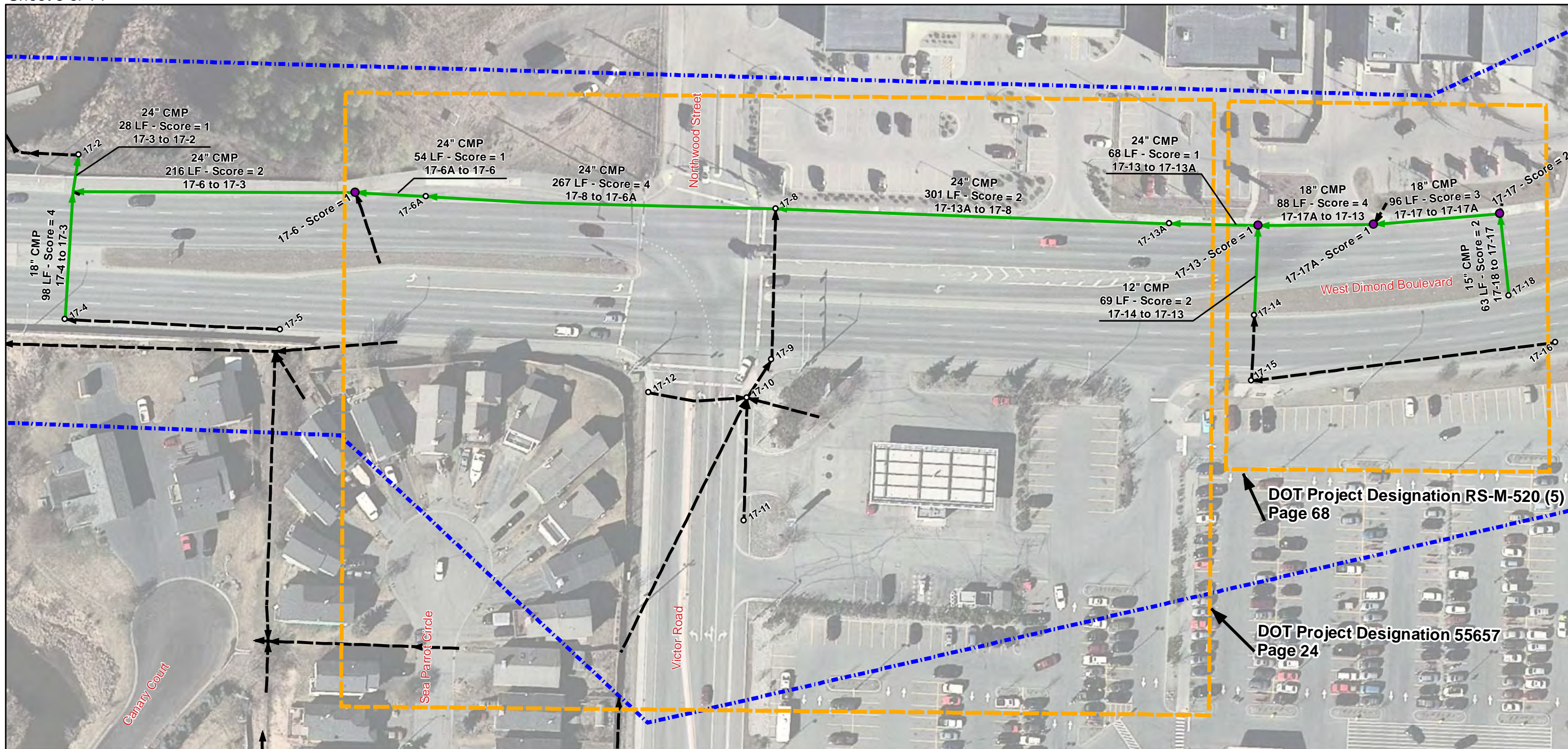
→ Inspected with Score

Score

- 0 - No Defect
- 1 - Minor Defect
- 2 - Minor to Moderate Defect
- 3 - Moderate Defect
- 4 - Significant Defect
- 5 - Most Significant Defect



West Dimond Boulevard: Jewel Lake Road to Old Seward Highway



Legend

- ⊕ Not Located

Manhole/Catchbasin

- Not Inspected

- Inspected without Score

- Inspected with Score

Pipe Segment

- ▶ Not Inspected

- Inspected with Score

Score

- 0 - No Defect

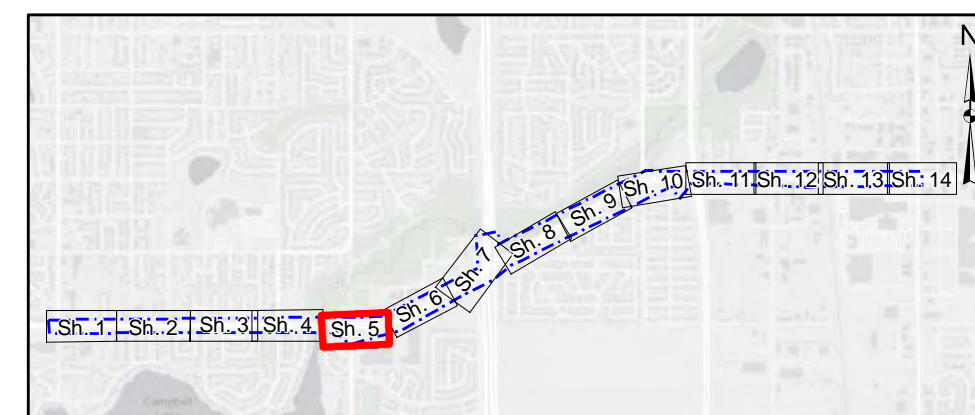
- ### 1 - Minor Defect

- ## 2 - Minor to Moderate Defect

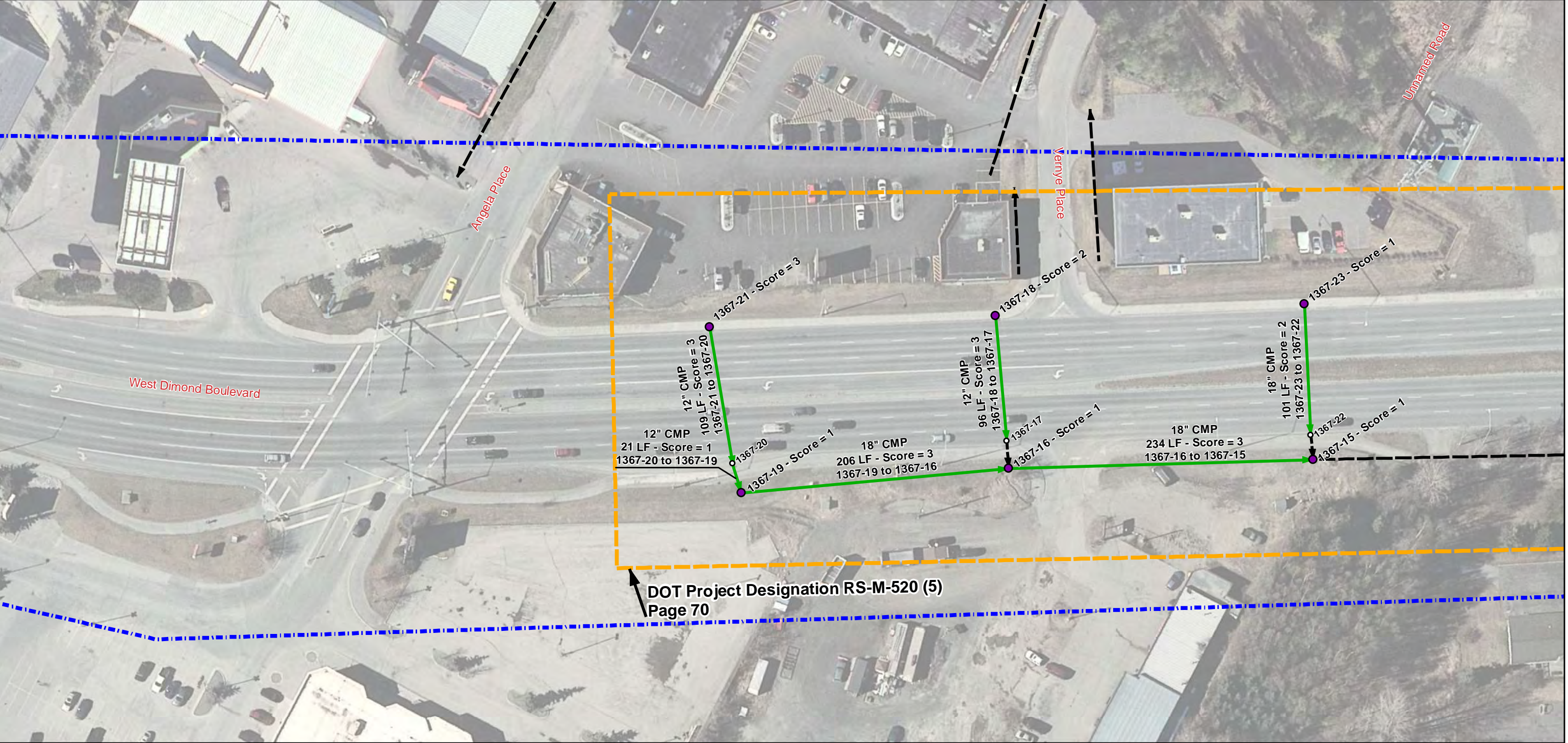
- ### 3 - Moderate Defect

- #### 4 - Significant Defect

- ### 5 - Most Significant Defect



West Dimond Boulevard: Jewel Lake Road to Old Seward Highway



0 37.5 75 Feet

Legend

⊕ Not Located

Manhole/Catchbasin

○ Not Inspected

● Inspected without Score

● Inspected with Score

Pipe Segment

---> Not Inspected

→ Inspected with Score

Score

0 - No Defect

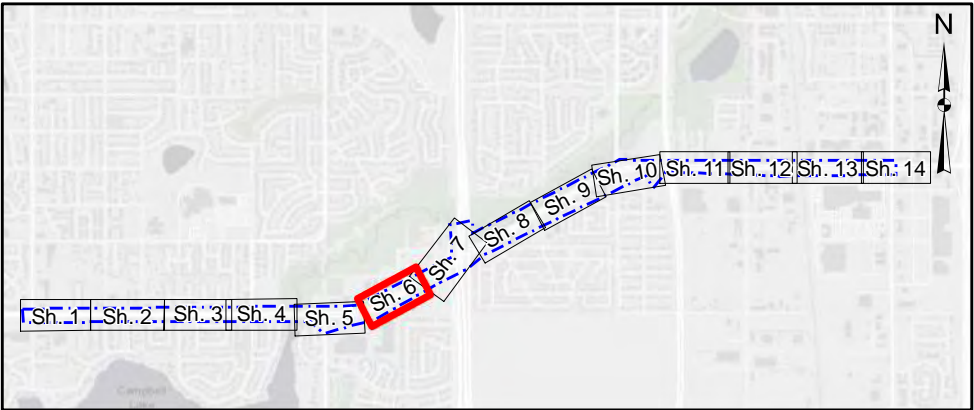
1 - Minor Defect

2 - Minor to Moderate Defect

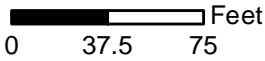
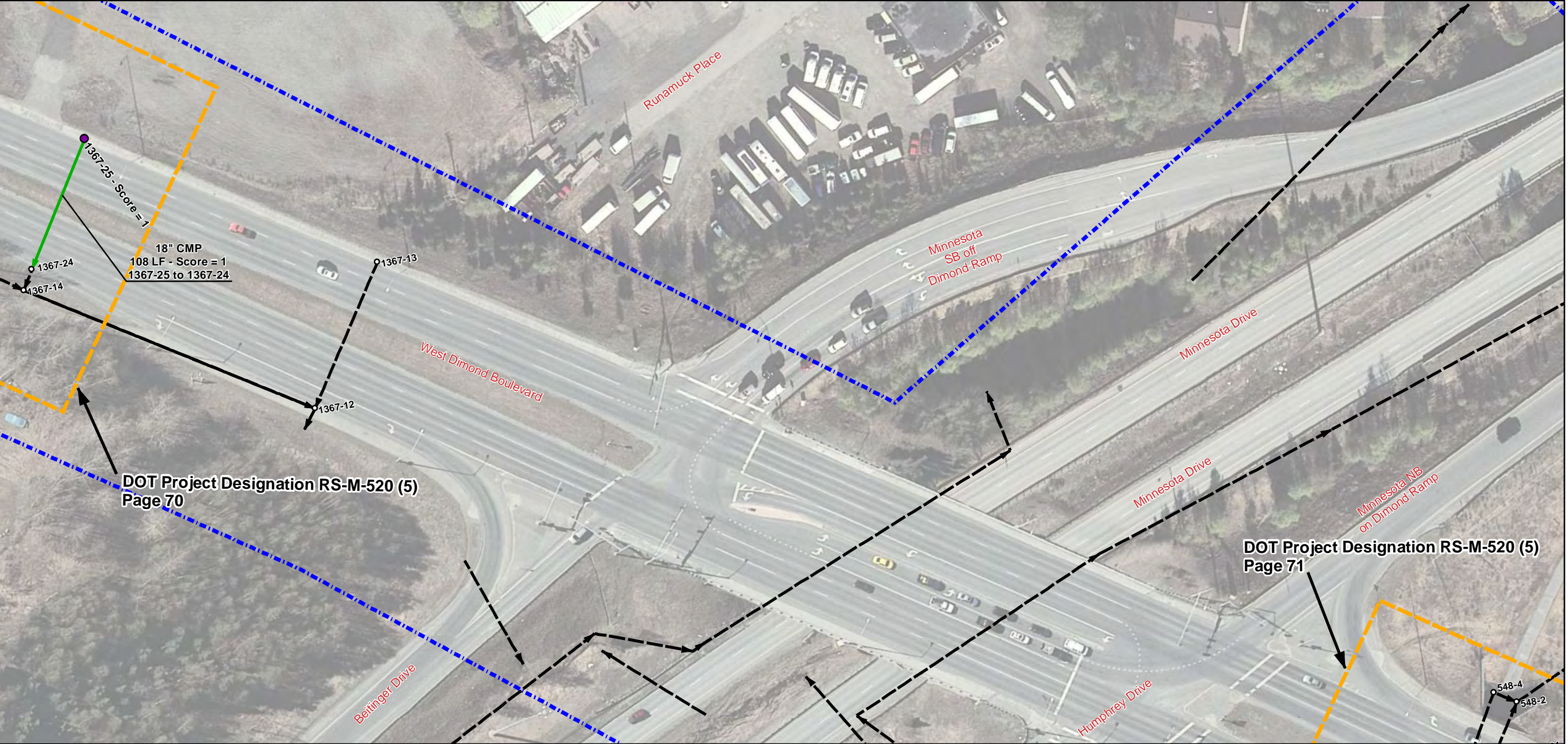
3 - Moderate Defect

4 - Significant Defect

5 - Most Significant Defect



West Dimond Boulevard: Jewel Lake Road to Old Seward Highway



Legend

⊕ Not Located

Manhole/Catchbasin

○ Not Inspected

● Inspected without Score

● Inspected with Score

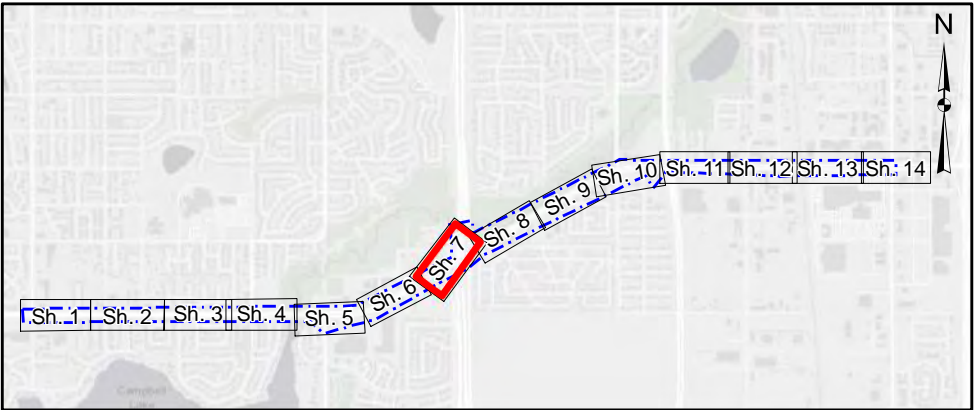
Pipe Segment

---▶ Not Inspected

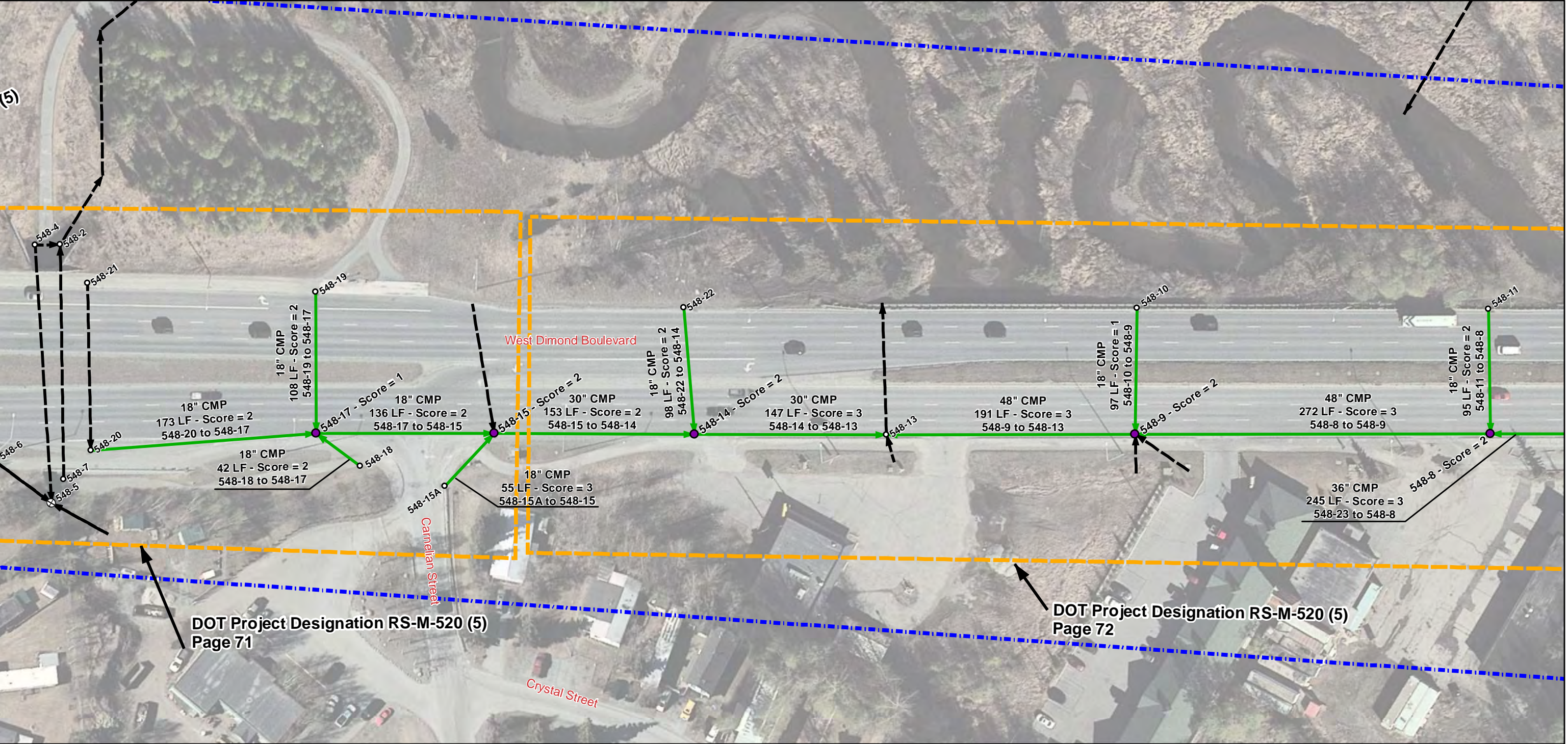
→ Inspected with Score

Score

- 0 - No Defect
- 1 - Minor Defect
- 2 - Minor to Moderate Defect
- 3 - Moderate Defect
- 4 - Significant Defect
- 5 - Most Significant Defect



West Dimond Boulevard: Jewel Lake Road to Old Seward Highway



0 37.5 75 Feet

Legend

⊕ Not Located

Manhole/Catchbasin

○ Not Inspected

● Inspected without Score

● Inspected with Score

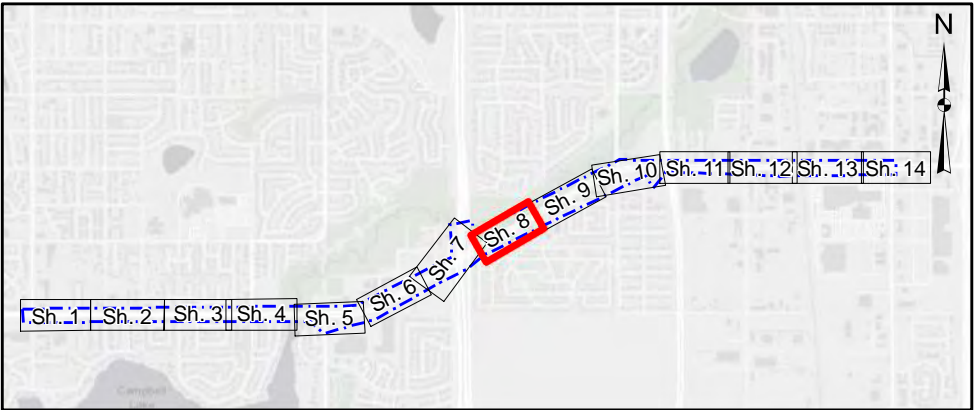
Pipe Segment

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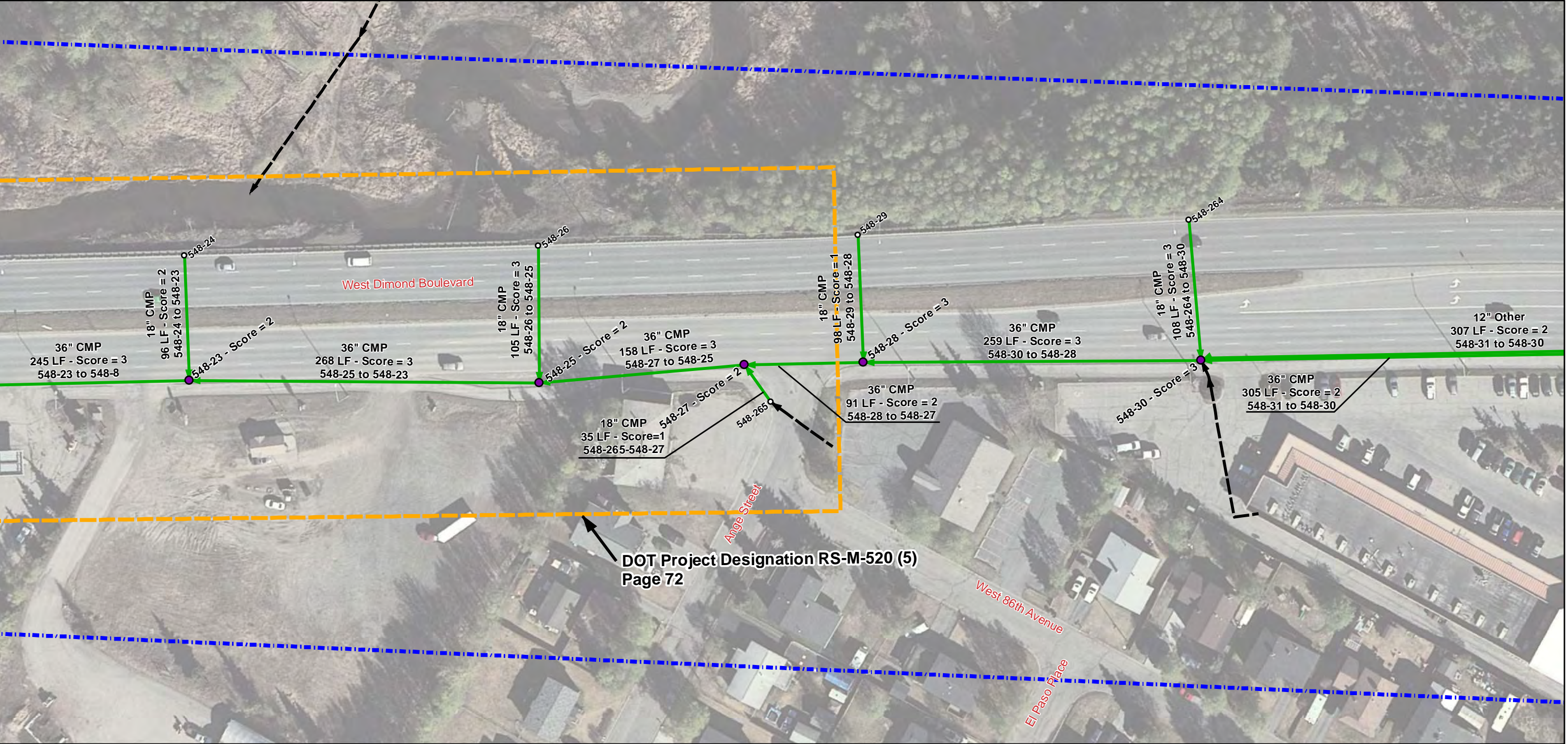
→ Inspected with Score

Score

- 0 - No Defect
- 1 - Minor Defect
- 2 - Minor to Moderate Defect
- 3 - Moderate Defect
- 4 - Significant Defect
- 5 - Most Significant Defect



West Dimond Boulevard: Jewel Lake Road to Old Seward Highway



0 37.5 75 Feet

Legend

⊕ Not Located

Manhole/Catchbasin

○ Not Inspected

● Inspected without Score

● Inspected with Score

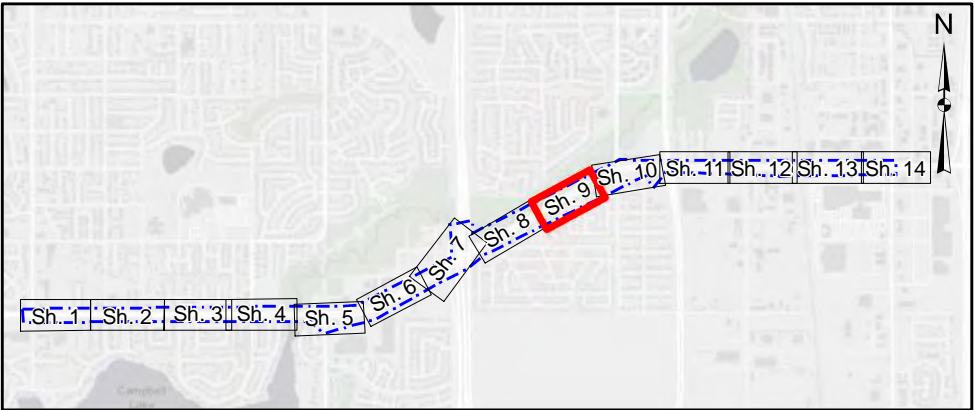
Pipe Segment

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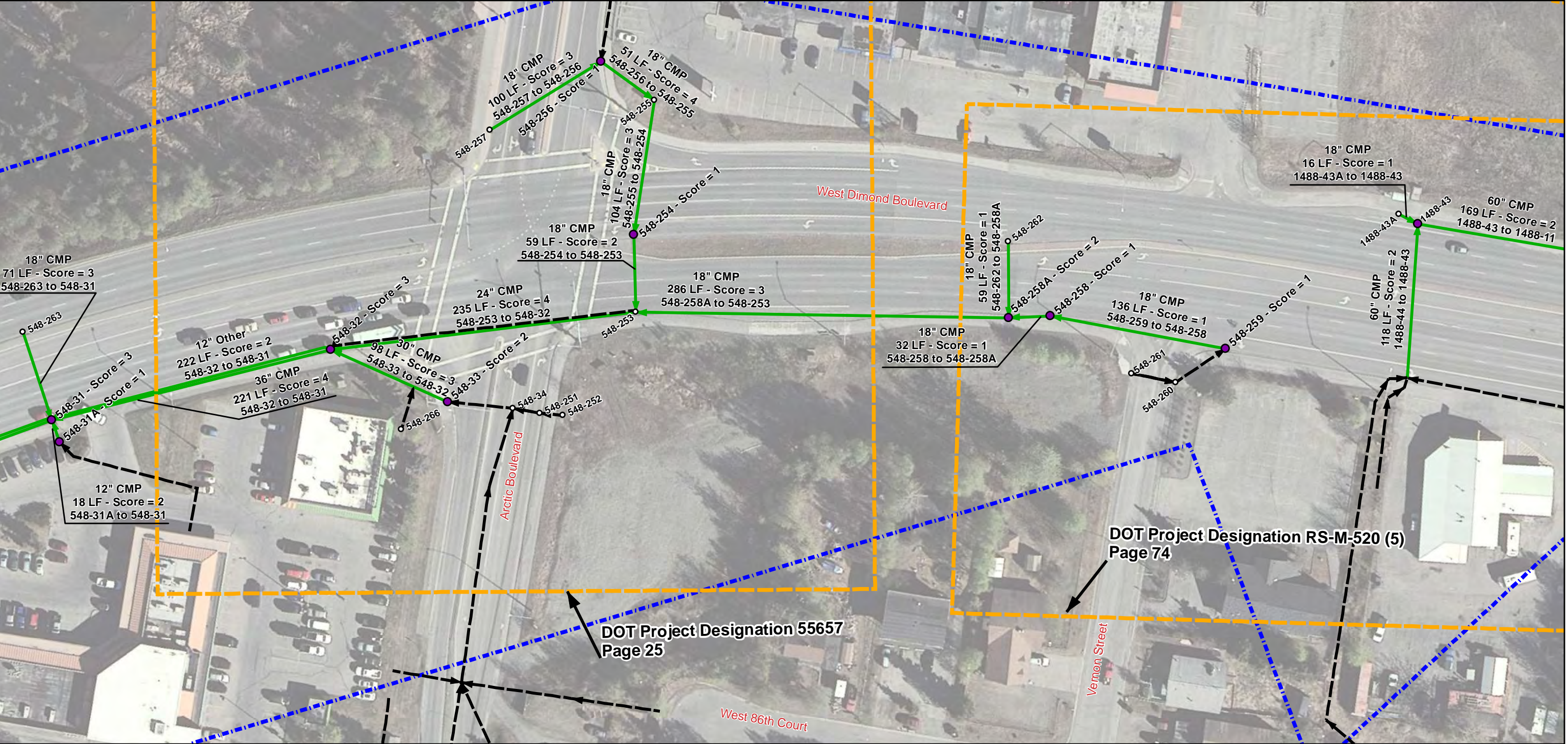
→ Inspected with Score

Score

- 0 - No Defect
- 1 - Minor Defect
- 2 - Minor to Moderate Defect
- 3 - Moderate Defect
- 4 - Significant Defect
- 5 - Most Significant Defect



West Dimond Boulevard: Jewel Lake Road to Old Seward Highway



0 37.5 75 Feet

Legend

⊕ Not Located

Manhole/Catchbasin

○ Not Inspected

● Inspected without Score

● Inspected with Score

Pipe Segment

---> Not Inspected

→ Inspected with Score

Score

0 - No Defect

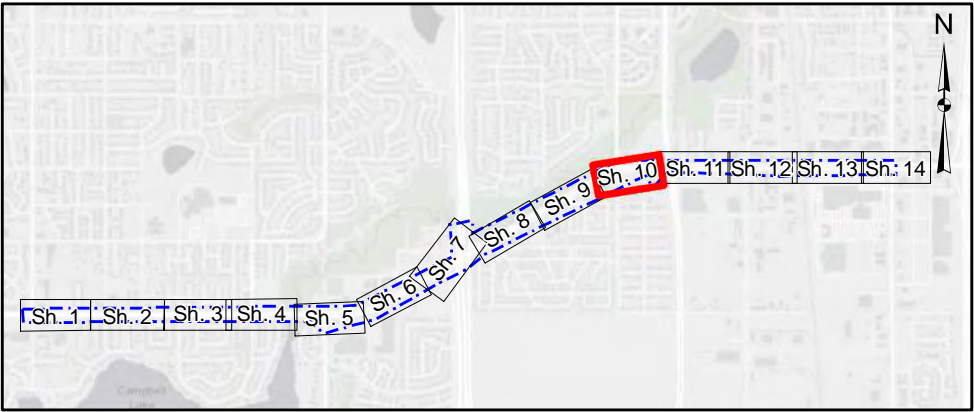
1 - Minor Defect

2 - Minor to Moderate Defect

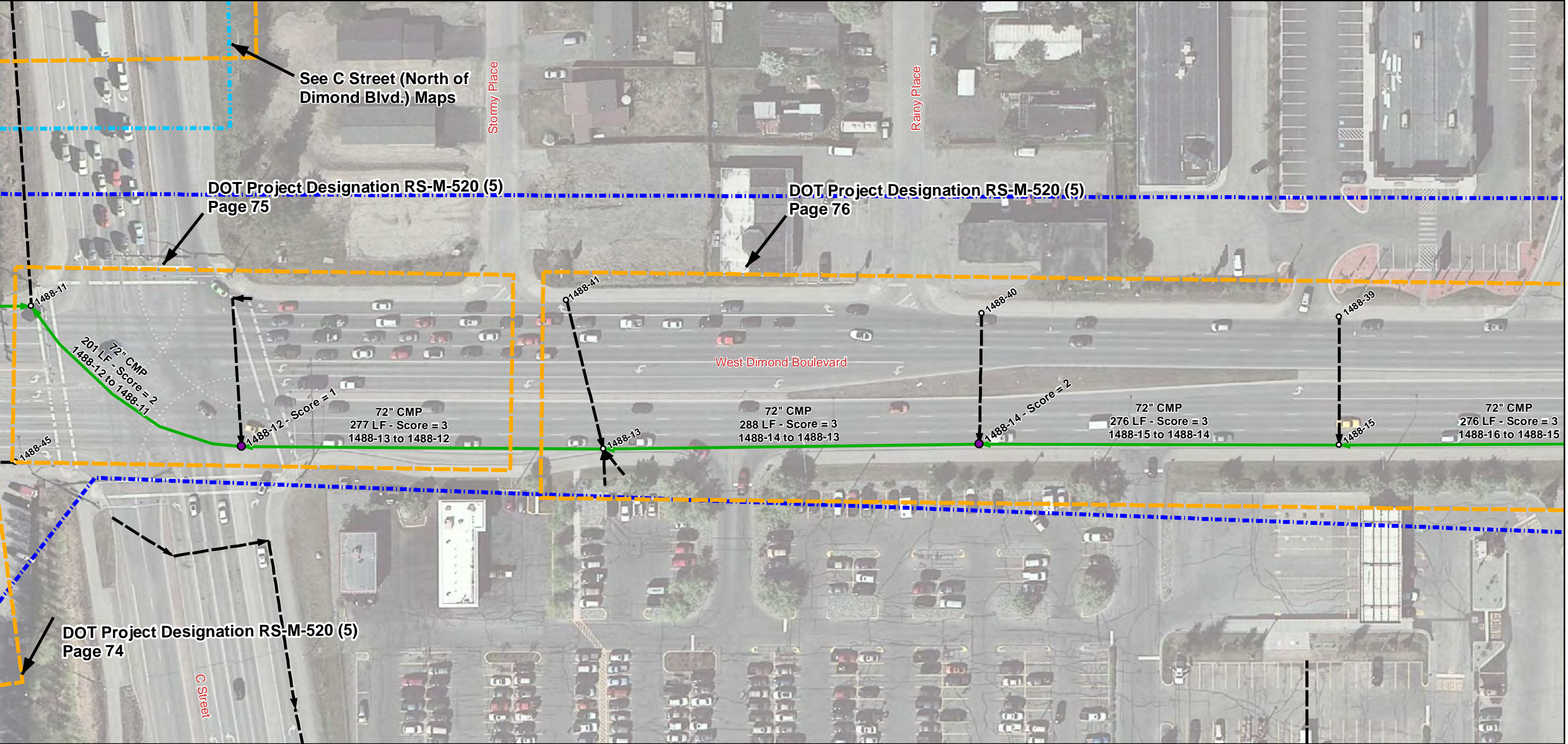
3 - Moderate Defect

4 - Significant Defect

5 - Most Significant Defect



West Dimond Boulevard: Jewel Lake Road to Old Seward Highway



0 37.5 75 Feet

Legend

⊕ Not Located

Manhole/Catchbasin

○ Not Inspected

● Inspected without Score

● Inspected with Score

Pipe Segment

---▶ Not Inspected

→ Inspected with Score

Score

0 - No Defect

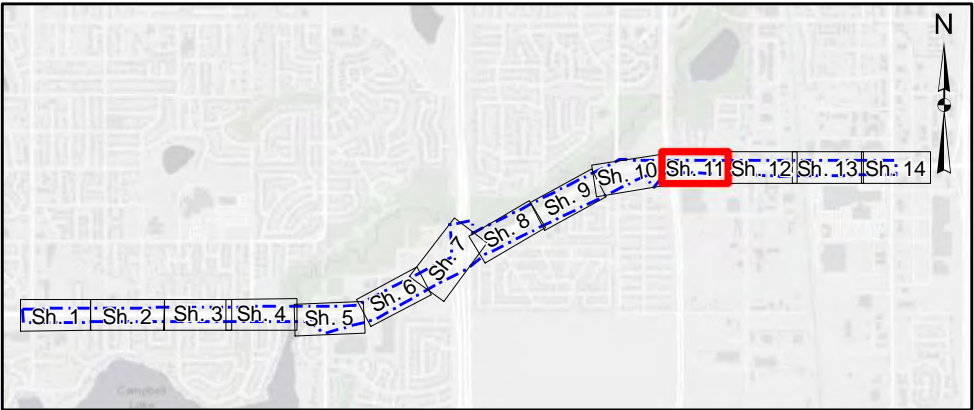
1 - Minor Defect

2 - Minor to Moderate Defect

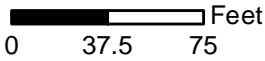
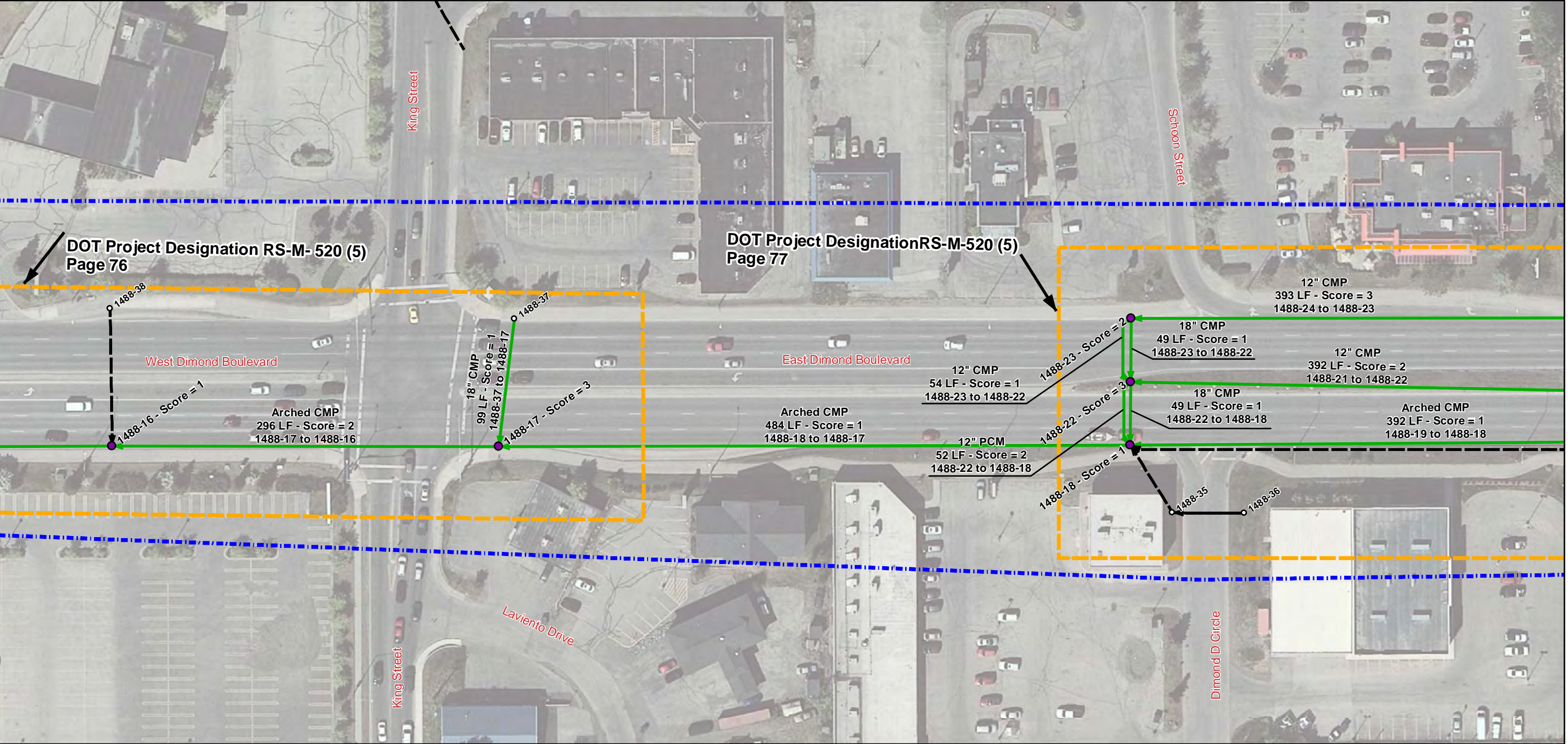
3 - Moderate Defect

4 - Significant Defect

5 - Most Significant Defect



West Dimond Boulevard: Jewel Lake Road to Old Seward Highway



Legend

⊕ Not Located

Manhole/Catchbasin

○ Not Inspected

● Inspected without Score

● Inspected with Score

Pipe Segment

---> Not Inspected

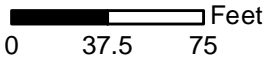
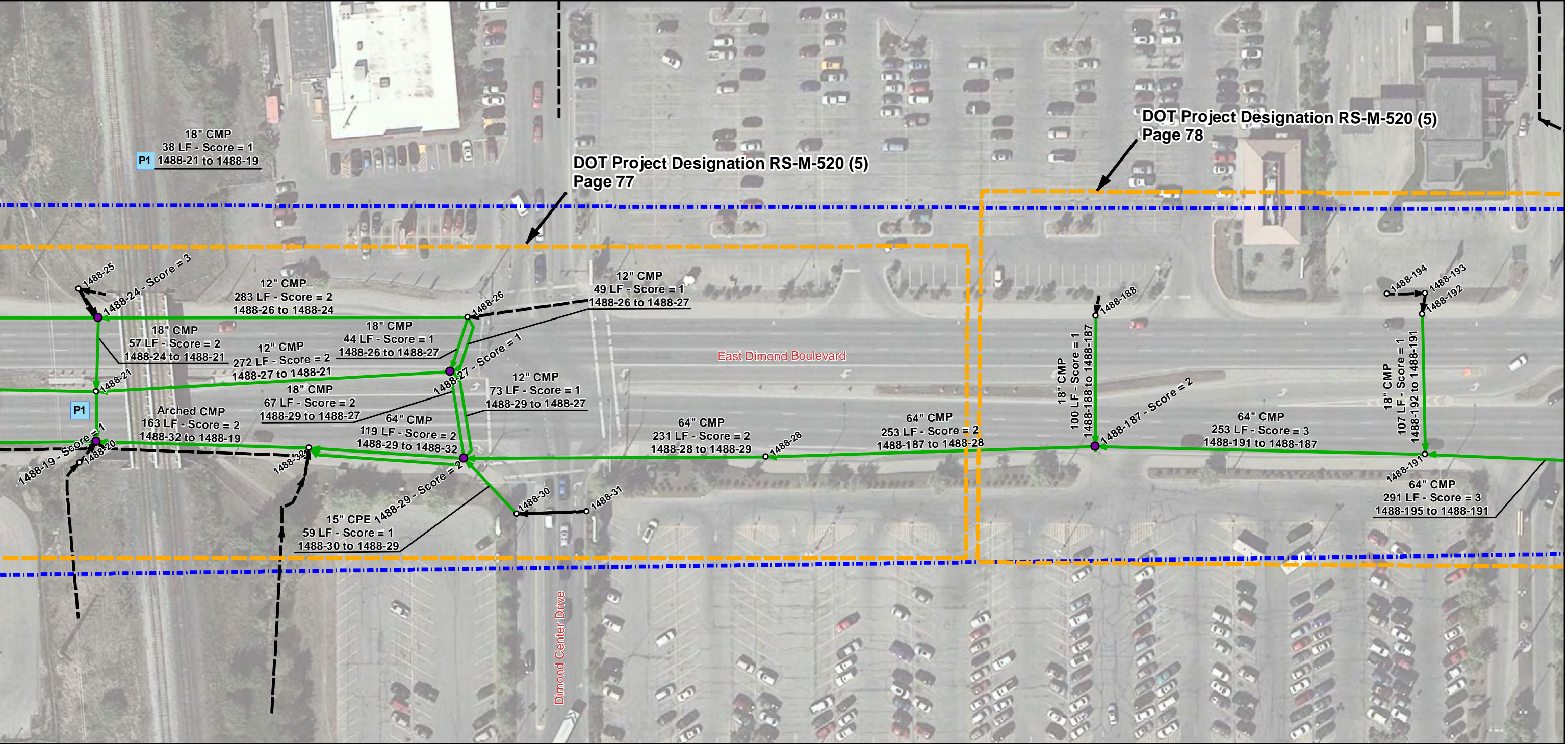
→ Inspected with Score

Score

- 0 - No Defect
- 1 - Minor Defect
- 2 - Minor to Moderate Defect
- 3 - Moderate Defect
- 4 - Significant Defect
- 5 - Most Significant Defect



West Dimond Boulevard: Jewel Lake Road to Old Seward Highway



Legend

⊕ Not Located

Manhole/Catchbasin

○ Not Inspected

● Inspected without Score

● Inspected with Score

Pipe Segment

---> Not Inspected

→ Inspected with Score

Score

0 - No Defect

1 - Minor Defect

2 - Minor to Moderate Defect

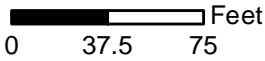
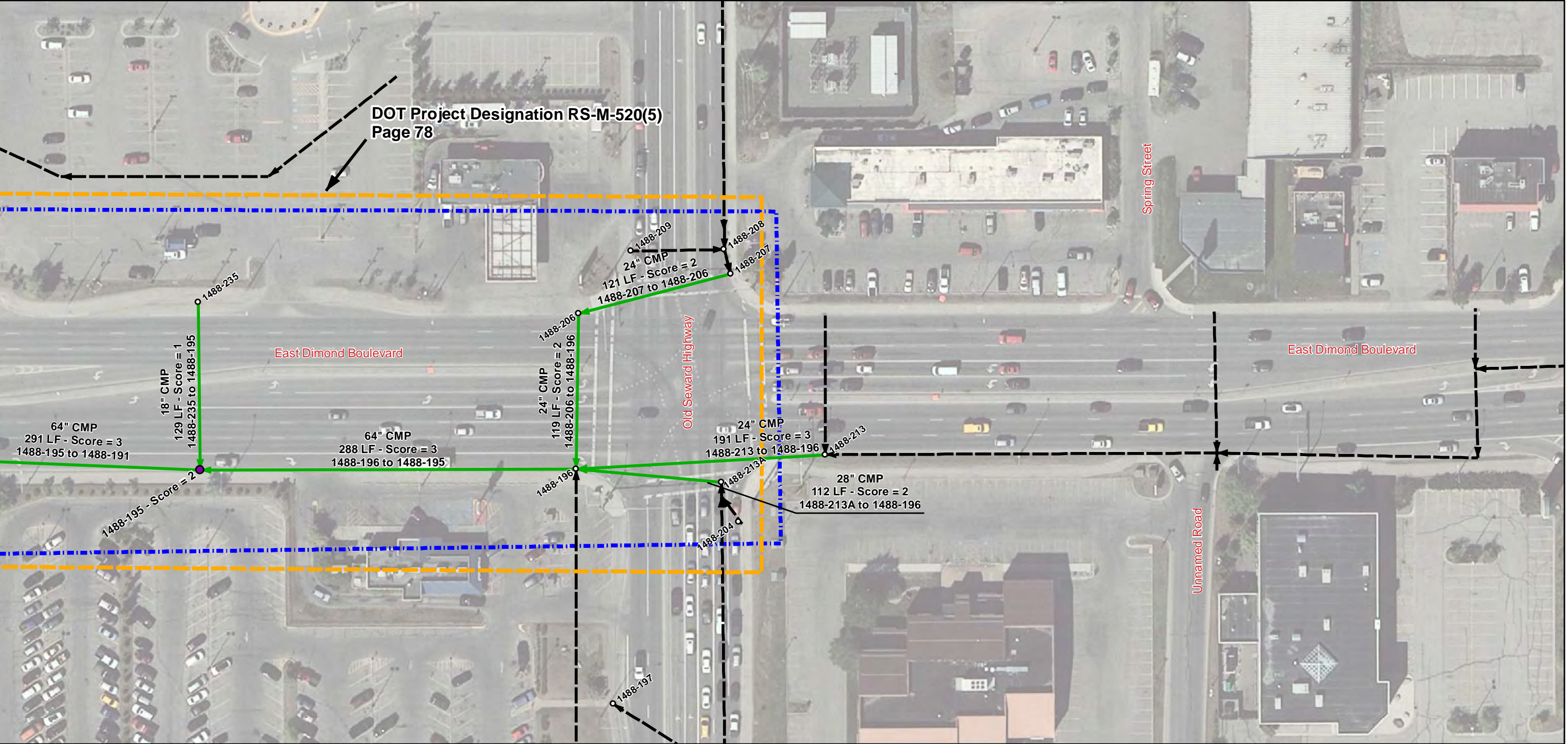
3 - Moderate Defect

4 - Significant Defect

5 - Most Significant Defect



West Dimond Boulevard: Jewel Lake Road to Old Seward Highway



Legend

- ⊕ Not Located
- Manhole/Catchbasin**
- Not Inspected
 - Inspected without Score
 - Inspected with Score

- Pipe Segment**
- ▶ Not Inspected
 - Inspected with Score

- Score**
- 0 - No Defect
 - 1 - Minor Defect
 - 2 - Minor to Moderate Defect
 - 3 - Moderate Defect
 - 4 - Significant Defect
 - 5 - Most Significant Defect



CCTV Data Summary and Inspection Logs

CR NHS Storm Drain Condition Report
Proj. No. 0A31055 / Z591280000

	NHS Storm Drain Inspections Dimond Blvd. (Jewel Lake to Old Seward)				Defect grades: 0=No Defect, 1=Minor Defect, 2=Minor to Moderate Defect, 3=Moderate Defect, 4=Significant Defect, 5=Most Significant Defect								2017 Inspections
													2018 Inspections
Page # in Appendix A	Upstream Structure No.	Downstream Structure No.	Location	Pipe Dia. (in.)	Material	CCTV Complete	CCTV Date	CCTV Length (ft.)	GIS Length (ft.)	CCTV Direction	General Condition Grade Score	Flow Depth (in.)	Additional Comments
1	1492-26	1492-25	North Dimond at Jewel Lake Rd.	30	CMP	Yes	5/25/2018	136	127	Upstream	3	1" to 2"	Pipe is curved. Invert probed, signs of corrosion, evidence of infiltration throughout pipe, possible hole, debris throughout pipe
	1492-25	1492-24	North Dimond at Jewel Lake Rd.	30	CMP	Yes	5/25/2018	115	73	Downstream	2	1" to 2"	Invert probed, signs of corrosion, scattered debris in pipe, discoloration in invert, signs of infiltration at joints
	1492-24	1492-23	Dimond Blvd. east of Jewel Lake Rd.	30	CMP	Yes	7/24/2017	151	159	Upstream	3	1" & 2" mud	Numerous corrosion spots w/material loss, some w/pin holes, 7:00 to 5:00 position, Sta. 0+00 to 0+80. Joints have leaks with mineral buildup.
	Unknown	1492-23	South Dimond Blvd. east of Jewel Lake Rd.	12	CMP	QuickView	7/24/2017	N/A - QuickView	95	Upstream	1	Minimal	West Perforated Drain Pipe, visible debris buildups, pipe appears structurally sound
	Unknown	1492-23	South Dimond Blvd. east of Jewel Lake Rd.	12	CMP	QuickView	7/24/2017	N/A - QuickView	60	Upstream	1	None	East Perforated Drain Pipe, debris buildup at manhole connection, possible mineral buildup at joint
	1492-23	1492-21	South Dimond Blvd. east of Jewel Lake Rd.	30	CMP	Yes	7/24/2017	356	361	Downstream	3	1" & 2" mud	Numerous corrosion spots w/material loss, & w/pin holes, Sta. 0+00 to 0+97. Joints have leaks with mineral buildup.
	1492-22	1492-21	Dimond Blvd. east of Jewel Lake Rd.	18	CMP	QuickView	7/24/2017	N/A - QuickView	71	Upstream	1	Minimal	Debris buildup at upstream and downstream manholes
	Unknown	1492-21	South Dimond Blvd. east of Jewel Lake Rd.	12	CMP	QuickView	7/24/2017	N/A - QuickView	27	Upstream	1	None	West Perforated Drain Pipe, debris buildup at manhole connection
	Unknown	1492-21	South Dimond Blvd. east of Jewel Lake Rd.	12	CMP	QuickView	7/24/2017	N/A - QuickView	31	Upstream	1	None	East Perforated Drain Pipe, debris buildup at manhole connection, possible discoloration at joint
	1492-21	1492-20	South Dimond Blvd. at Noble Circle	30	CMP	Yes	7/24/2017	252	263	Upstream	3	2"	Corrosion spots (0.5" to 3" Dia.) w/pin holes, Sta. 0+01 & 0+14 & 0+32. Most joints have leaks with mineral buildup. Possible fracture at Sta.1+55.
	Unknown	1492-20	South Dimond Blvd. east of Noble Circle	12	CMP	QuickView	7/24/2017	N/A - QuickView	19	Upstream	1	None	Perforated Drain Pipe, 1-2" of debris, no visible defects
	Unknown	1492-20	South Dimond Blvd. east of Noble Circle	12	CMP	QuickView	7/24/2017	N/A - QuickView	25	Upstream	1	None	Perforated Drain Pipe, debris buildup 1-2", no visible defects
	1492-20A	1492-20	South Dimond Blvd. east of Noble Circle	12	CMP	QuickView	7/24/2017	N/A - QuickView	27	Upstream	1	None	No visible defects, minimal debris

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1	1492-20	1492-18	South Dimond Blvd. east of Noble Circle	30	CMP	Yes	7/24/2017	231	232	Downstream	3	1"	Corrosion spots w/material loss & w/eight plus pin holes. Half of the joints have leaks with mineral buildup.
2	1492-18	1492-17	Dimond Blvd. west of Blackberry St.	30	CMP	Yes	7/24/2017	120	117	Upstream	2	Minimal	Two pin holes: Sta. 0+04 & Sta. 0+56. All joints have leaks with mineral buildup.
	1492-53	1492-17	Dimond Blvd. at Blackberry St.	18	CMP	QuickView	7/24/2017	N/A - QuickView	88	Upstream	2	1-2"	Visible discoloration at joint, varying levels of debris, visible discoloration between 4:00 and 8:00 position
	Unknown	1492-17	South Dimond Blvd. at Blackberry St.	12	CMP	QuickView	7/24/2017	N/A - QuickView	64	Upstream	2	Minimal	Visible discoloration/corrosion in pipe invert
	1492-17	142-17A	South Dimond Blvd. at Blackberry St.	30	CMP	Yes	7/24/2017	112	131	Downstream	3	1"	Multiple pin holes Sta. 0+27 to 0+30 @ 9:00 position & pin hole Sta. 0+52. All joints have leaks with mineral buildup.
	142-17A	1492-3	South Dimond Blvd. east of Blackberry St.	30	CMP	Yes	7/24/2017	224	229	Downstream	3	Minimal	8% ovality from Sta. 1+10 to 1+60. Corrosion w/minor material loss, 2 to 3 joints have leaks with mineral buildup.
	1492-54	1492-3	Dimond Blvd. east of Blackberry St.	18	CMP	Yes	7/24/2017	156	163	Upstream	1	Minimal	Pipe Cleaned 7/24/17. Discoloration & some corrosion in the invert.
	1492-4	1492-3	South Dimond Blvd. east of Blackberry St.	18	CMP	Yes	7/24/2017	98	105	Upstream	1	Minimal	Pipe Cleaned 7/24/17. Discoloration & some corrosion in the invert.
	Unknown	1492-3	South Dimond Blvd. east of Blackberry St.	12	CMP	QuickView	7/24/2017	N/A - QuickView	54	Upstream	1	None	Perforated Drain Pipe, buildup at joint, debris deposits
	Unknown	1492-4	South Dimond Blvd. east of Blackberry St.	12	CMP	QuickView	7/24/2017	N/A - QuickView	51	Upstream	3	None	Perforated Drain Pipe, organic matter buildup in pipe, root protrusion visible
	1492-15	1492-4	Dimond Blvd. west of Dewberry St.	18	CMP	QuickView	7/24/2017	N/A - QuickView	71	Upstream	3	0-1"	Unidentified debris in pipe with possible protrusion in pipe possible corrosion or mineral buildup, requires further inspection, visible grade break
	1492-5	1492-4	South Dimond Blvd. west of Dewberry St.	18	CMP	Yes	7/25/2017	269	278	Downstream	3	1"	Evidence of corrosion holes or fractures 5:00 to 7:00 position: Sta. 1+50, 1+90, 2+10 & 2+50. Require cleaning to confirm.
	1492-12	1492-5	Dimond Blvd. at Dewberry St.	18	CMP	Yes	7/25/2017	62	73	Upstream	2	Minimal	Discoloration & some corrosion with metal loss in the invert.

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2	1492-6	1492-5	South Dimond Blvd. east of Dewberry St.	18	CMP	Yes	7/25/2017	296	301	Upstream	2	Minimal	Discoloration & some corrosion with metal loss in the invert.
3	585-51	585-50	North Dimond Blvd. west of Roy St.	18	CMP	Yes	7/22/2017	65	69	Upstream	2	Minimal	Pipe Cleaned 7/22/17. Corrosion w/some metal loss from 5:00 to 7:00 position, for the length of the pipe.
	585-52	585-50	Dimond Blvd. west of Roy St.	18	CMP	Yes	7/22/2017	63	72	Upstream	2	Minimal	Corrosion w/some metal loss. Joint damaged at 4:00 position, Sta. 0+14.
	585-50	585-48	North Dimond Blvd. at Roy St.	18	CMP	Yes	7/22/2017	341	348	Downstream	3	1"	All joints w/leaks & mineral buildup. Fractures/holes & pin holes at some joints.
	585-48	585-36	North Dimond Blvd. west of Washburn St.	18	CMP	Yes	7/21/2017	322	323	Upstream	2	1"	All joints have some corrosion, leaks & mineral build-up.
	585-37	585-36	Dimond Blvd. west of Washburn St.	18	CMP	Yes	7/21/2017	111	118	Upstream	3	1" to 6"	Corrosion w/metal loss & holes. Approx. 6" high point from Sta. 0+42 to 0+52. w/reverse grade Sta. 0+52 to Sta. 0+62.
4	585-36	585-15	North Dimond Blvd. at Washburn St.	18	CMP	Yes	7/21/2017	100	105	Upstream	2	1"	Corrosion w/some metal loss. Joints w/leaks & mineral buildup. Multiple vertical & one horizontal grade break.
	585-16	585-15	North Dimond Blvd. at Washburn St.	24	CMP	Yes	7/21/2017	54	59	Upstream	1	1" to 2"	Corrosion w/some metal loss. Joint w/leaks & mineral buildup. Vertical grade breaks.
	585-53	585-15	Dimond Blvd. east of Washburn St.	18	CMP	Yes	7/21/2017	93	99	Upstream	2	Minimal	Pipe Cleaned 7/21/17. Corrosion w/some metal loss. 3-1" deformations, 12:00 position, Sta. 0+32.
	585-15	585-14	North Dimond Blvd. east of Washburn St.	24	CMP	Yes	7/21/2017	206	214	Downstream	2	1"	Corrosion w/some metal loss. Multiple joints w leaks & mineral build-up. Deformation at the 5:00 position, 5% flow reduction, Sta. 1+30.
	585-14	585-13	North Dimond Blvd. at Arlene St.	24	CMP	Yes	7/21/2017	34	44	Downstream	1	1"	Invert corrosion w/some metal loss. Horizontal bend to the north & increase vertical grade break.
	585-13	585-12	North Dimond Blvd. at Arlene St.	24	CMP	Yes	7/21/2017	36	54	Upstream	2	1"	Joints w/corrosion, metal loss & leaking w/some mineral build-up, Sta. 0+15.
	585-54	585-12	North Dimond Blvd. at Arlene St.	18	CMP	Yes	7/21/2017	25	34	Upstream	1	1"	Joint w/corrosion & leaking w/some mineral build-up, Sta. 0+14.
	585-11	585-7	South Dimond Blvd. at Arlene St.	18	CMP	Yes	7/25/2017	65	65	Downstream	2	Minimal	Invert covered w/debris condition unknown. Some corrosion with minor metal loss at water-air interface.

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4	585-7	585-6	South Dimond Blvd. at Arlene St.	18	CMP	Yes	7/25/2017	75	74	Upstream	2	Minimal	Some corrosion with minor metal loss at 5:00 & 7:00 position along length of the pipe.
	585-12	585-4	North Dimond Blvd. east of Arlene St.	30	CMP	Yes	7/21/2017	233	234	Downstream	3	1"	Multiple joints w/corrosion, metal loss & leaking w/mineral build-up. Three 1" corroded holes, 9:00 position, Sta. 0+90.
	585-6	585-5	South Dimond Blvd. east of Arlene St.	18	CMP	Yes	7/25/2017	97	112	Upstream	2	1" to 4"	Pipe cleaned. Some corrosion with minor metal loss at 5:00 & 7:00 along length of the pipe.
	585-5	585-4	Dimond Blvd. east of Arlene St.	18	CMP	Yes	7/25/2017	124	130	Downstream	2	1"	Sta. 0+00 to 0+40 depth of water & mud 5" to 2". Corrosion with minor metal loss in pipe invert.
	585-4	585-3	North Dimond Blvd. east of Arlene St.	30	CMP	Yes	7/21/2017	328	335	Upstream	2	1"	Corrosion under thaw cables entry length of pipe. Slight joint off-set Sta.3+18.
	585-3	585-2	North Dimond Blvd. east of Arlene St.	30	CMP	Yes	7/21/2017	70	78	Downstream	3	1"	Joint off-set Sta. 0+42. 5% ovality observed approx. Sta.0+35 to 0+42.
	585-72	585-2	North Dimond Blvd. east of Arlene St.	18	CMP	Yes	7/21/2017	25	29	Downstream	1	Minimal	Surface corrosion in invert for the length of the pipe.
	585-73	585-72	Dimond Blvd. east of Arlene St.	18	CMP	Yes	7/21/2017	92	98	Upstream	1	Minimal	Minor surface corrosion in invert for the length of the pipe.
5	17-3	17-2	North Dimond Blvd. west of Victor Road	24	CMP	Yes	7/9/2018	21	28	Downstream	1	1"	No major pipe defects
	17-4	17-3	Dimond Blvd. west of Victor Road	18	CMP	No	7/9/2018	15	98	Upstream	4	None	Large pipe deformation at 15 LF, unable to inspect whole pipe
	17-6	17-3	North Dimond Blvd. west of Victor Road	24	CMP	Yes	7/9/2018	213	216	Downstream	2	1"	Deformations in pipe
	17-6A	17-6	North Dimond Blvd. west of Victor Road	24	CMP	Yes	7/9/2018	48	54	Upstream	1	1"	Possible invert surface corrosion, no major defects
	17-8	17-6A	North Dimond Blvd. at Victor Road	24	CMP	No	7/9/2018	107	267	Upstream	4	1"	Large pipe deformation, possible surface corrosion in invert, mineralization at joints
	17-13A	17-8	North Dimond Blvd. east of Victor Road	24	CMP	Yes	7/7/2018	297	301	Downstream	2	1"	Discoloration and evidence of corrosion in invert, infiltration, minimal debris, no major defects
	17-13	17-13A	North Dimond Blvd. east of Victor Road	24	CMP	Yes	7/7/2018	70	68	Downstream	1	Minimal	Discoloration and minimal debris in pipe, possible surface corrosion in invert, no major defects
	17-14	17-13	North Dimond Blvd. east of Victor Road	12	CMP	No	7/9/2018	35	69	Downstream	2	Minimal	Pipe half full of debris at 35 LF, discoloration and evidence of corrosion in invert, possible pipe belly

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5	17-17A	17-13	North Dimond Blvd. east of Victor Road	18	CMP	No	8/4/2017	31	89	Downstream	4	None	Too much debris to complete inspection. Hole in bottom of upstream invert. See inspection report for full defect descriptions.
	17-17	17-17A	North Dimond Blvd. east of Victor Road	18	CMP	Yes	8/4/2017	91	96	Upstream	3	Minimal	Visible surface corrosion, possible pipe belly at 21 LF, non-standard end treatment
	17-18	17-17	North Dimond Blvd. east of Victor Road	15	CMP	Yes	7/9/2018	61	63	Downstream	2	Minimal	Ovality in downstream end of pipe, evidence of invert corrosion
6	1367-21	1367-20	Dimond Blvd east of Angela Place	12	CMP	Yes	8/4/2017	101	106	Downstream	3	None	Surface corrosion and discoloration, potential sags at 56 LF and 76 LF, offset joint 0-2" of debris throughout pipe
	1367-20	1367-19	South Dimond Blvd. east of Angela Place	12	CMP	Yes	8/4/2017	N/A	12	Downstream	1	0-1"	Inspected using zoom function of CCTV camera, unable to determine invert condition, pipe appears sound
	1367-19	1367-16	South Dimond Blvd. west of Victoria Place	18	CMP	Yes	8/4/2017	198	201	Upstream	3	2-3"	Pipe Cleaned 8/4/17, 2 construction repairs at 144 LF and 149 LF, multiple deformations, visible surface discoloration, evidence of joint infiltration
	1367-18	1367-17	Dimond Blvd. at Vernye Place	12	CMP	Yes	8/4/2017	93	97	Downstream	3	None	Pipe Cleaned 8/4/17, various degrees of surface corrosion throughout pipe, horizontal deflection and joint separation at 44 LF
	1367-16	1367-15	South Dimond Blvd. at Victoria Place	18	CMP	Yes	8/4/2017	235	234	Downstream	3	Minimal	Pipe partially cleaned 8/4/17, various degrees of surface corrosion throughout pipe, evidence of joint infiltration at 205 LF and 230 LF
	1367-23	1367-22	Dimond Blvd. east of Victoria Place	18	CMP	Yes	8/4/2017	93	101	Downstream	2	None	Surface discoloration/corrosion, possible sag in pipe 33 LF to 43 LF
7	1367-25	1367-24	Dimond Blvd. east of Victoria Place	18	CMP	Yes	8/4/2017	100	108	Downstream	1	None	Minimal discoloration and corrosion, minimal debris
8	548-20	548-17	South Dimond Blvd. west of Carnelian Street	18	CMP	Yes	7/25/2017	170	173	Upstream	2	Minimal	Some corrosion w/pitting & minor metal loss in invert along length of the pipe.
	548-19	548-17	Dimond Blvd. west of Carnelian Street	18	CMP	Yes	7/25/2017	102	108	Upstream	2	Minimal	Some corrosion w/pitting & minor metal loss in invert along length of the pipe.

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8	548-18	548-17	South Dimond Blvd. at Carnelian Street	18	CMP	No	7/25/2017	0	42	Upstream	2	Minimal	Invert covered with debris, camera could not move. Using Zoom lens for inspection. Minor corrosion on pipe sides.
	548-17	548-15	South Dimond Blvd. at Carnelian Street	18	CMP	Yes	7/31/2017	129	136	Upstream	2	1"	Pipe Cleaned 7/31/17. Some corrosion w/pitting in invert along length of the pipe.
	548-15A	548-15	South Dimond Blvd. at Carnelian Street	18	CMP	No	7/31/2017	17	56	Upstream	3	Minimal	Hole at 6:00 position Sta. 0+01. Survey abandoned to due debris. Two bend to the west w/some corrosion.
	548-15	548-14	Dimond Blvd. east of Carnelian Street	30	CMP	Yes	7/31/2017	147	154	Downstream	2	1"	Some corrosion w/pitting & minor metal loss, 5:00 & 7:00 position along length of the pipe.
	548-22	548-14	Dimond Blvd. east of Carnelian Street	18	CMP	No	7/31/2017	3	98 LF	Upstream	2	Minimal	Minor corrosion at 5:00 to 7:00 position along length of the pipe. Camera stopped at Sta. 0+03, metal lip protruding at joint.
	548-14	548-13	South Dimond Blvd. east of Carnelian Street	30	CMP	Yes	7/31/2017	141	147	Downstream	3	1"	Corrosion w/pitting & metal loss, 5:00 & 7:00 position along length of the pipe. Invert may have fractures covered by debris & water.
	548-9	548-13	South Dimond Blvd. east of Carnelian Street	48	CMP	Yes	7/31/2017	178	191	Downstream	3	2"	Corrosion w/pitting & metal loss along length of the pipe. Invert may have fractures covered by debris & water.
	548-10	548-9	Dimond Blvd. east of Carnelian Street	18	CMP	Yes	7/31/2017	85	97	Upstream	1	Minimal	Minor corrosion, 5:00 & 7:00 position along length of the pipe.
	548-8	548-9	South Dimond Blvd. east of Carnelian Street	48	CMP	Yes	7/31/2017	264	272	Upstream	3	2" to 4"	10% Ovality Sta. 1+37 to 1+81. Multiple holes Sta. 1+70, 1+78, 1+81 & 2+62. Possible invert fractures covered w/water.
	548-11	548-8	Dimond Blvd. west of Ange Street	18	CMP	No	7/31/2017	77	95	Upstream	2	Minimal	Camera stopped due to debris. Corrosion w/pitting & possible metal loss, 5:00 & 7:00, intermittently along pipe.
9	548-23	548-8	South Dimond Blvd. west of Ange Street	36	CMP	Yes	7/31/2017	236	245	Upstream	3	1" to 4"	Corrosion w/pitting & possible metal loss along length of the pipe. Several bellies create flows of 4" to 1". Minor joint separation Sta. 1+76. Deformation Sta. 0+70. No flow reduction.

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9	548-24	548-23	Dimond Blvd. west of Ange Street	18	CMP	Yes	7/31/2017	87	96	Upstream	2	Minimal	Corrosion w/pitting Sta. 0+75 to 0+85. Two deformations Sta. 0+29 & 0+75. No pipe flow reduction.
	548-25	548-23	South Dimond Blvd. west of Ange Street	36	CMP	Yes	7/31/2017	263	268	Upstream	3	2"	Corrosion w/pitting & metal loss along length pipe. Possible corrosion fractures at Sta. 0+58 & 1+18. Confirm before lining. Deformation Sta. 1+76.
	548-26	548-25	Dimond Blvd. west of Ange Street	18	CMP	Yes	7/31/2017	97	105	Upstream	3	Minimal	Heavy corrosion w/metal loss, Sta. 0+89 to 0+94. Joint separation 1" to 2" gap Sta. 0+30. Debris 5:00 to 7:00 position, length of pipe.
	548-27	548-25	South Dimond Blvd. west of Ange Street	36	CMP	Yes	7/31/2017	151	158	Upstream	3	2" to 4"	Multiple deflections at joints to the south. Deep corrosion, 0.5" Dia., pitting 5:00 Sta. 0+18 to 0+20. Corrosion w/pitting along length pipe. Deformations 12:00. No pipe flow reduction.
	548-265	548-27	South Dimond Blvd. at Ange Street	18	CMP	No	8/1/2017	2	35	Upstream	1	None	Unable to CCTV due to debris. Zoomed to end of pipe.
	548-28	548-27	South Dimond Blvd. at Ange Street	36	CMP	Yes	8/1/2017	82	91	Upstream	2	1" to 2"	Evidence of discoloration/corrosion in invert, no major defects
	548-29	548-28	Dimond Blvd. at Ange Street	18	CMP	No	8/1/2017	27	98	Upstream	1	None	Deformation in pipe stopped inspection, zoomed to end
	548-30	548-28	South Dimond Blvd. east of Ange Street	36	CMP	Yes	8/1/2017	304	305	Upstream	3	1" to 2"	Evidence of discoloration/corrosion in invert, evidence of joint infiltration, root intrusion, corrosion pitting in pipe walls
	548-264	548-30	Dimond Blvd. west of Arctic Blvd.	18	CMP	Yes	8/1/2017	99	108	Upstream	3	None	Debris at downstream end, various depths throughout, corrosion in downstream end
	548-31	548-30	South Dimond Blvd. west of Arctic Blvd.	12	CMP	No	8/1/2017	296	307	Downstream	2	None	Perforated Drain Pipe. Zoomed to end, two deformations, root infiltration at joints, varying debris
	548-31	548-30	South Dimond Blvd. west of Arctic Blvd.	36	CMP	Yes	8/1/2017	304	305	Upstream	2	1-2"	Evidence of discoloration/corrosion in invert, minor deformations, verify invert condition
10	548-263	548-31	Dimond Blvd. west of Arctic Blvd.	18	CMP	Yes	8/1/2017	60	71	Upstream	3	None	Corrosion last five feet before upstream structure.

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10	548-31A	548-31	South Dimond Blvd. west of Arctic Blvd.	12	CMP	Yes	8/1/2017	7	18	Upstream	2	None	Deformations in pipe, no major defects, downstream end leads to connection to possible parking lot drainage
	548-32	548-31	South Dimond Blvd. west of Arctic Blvd.	12	CMP	No	8/1/2017	170	222	Upstream	2	None	Unable to complete inspection due to debris on 8/1/17. Inspected from Upstream Manhole on 8/2/17 unable to complete inspection, root infiltration at joints
	548-32	548-31	South Dimond Blvd. west of Arctic Blvd.	36	CMP	Yes	8/1/2017	234	220	Upstream	4	2" to 3"	Multiple deformations and holes in pipe, evidence of corrosion in invert
	548-253	548-32	South Dimond Blvd. west of Arctic Blvd.	12	CMP	No	8/2/2017	1	237	Upstream	N/A	None	Perforated pipe. Abandoned survey due to debris.
	548-253	548-32	South Dimond Blvd. west of Arctic Blvd.	24	CMP	No	8/2/2017	10	235	Downstream	4	3-4"	Attempted pipe cleaning 8/2/17. Holes in invert and spring line 9 ft. from upstream manhole
	548-33	548-32	South Dimond at Arctic Blvd.	30	CMP	Yes	8/2/2017	71	98	Downstream	3	0-3"	Multiple deformations throughout pipe, potential sag at 45 FL, corrosion/wear at service connection
	548-257	548-256	North Dimond at Arctic Blvd.	18	CMP	No	7/22/2017	29	100	Upstream	3	Minimal	Deformation blocked camera, survey abandoned. Deformation Sta. 0+18 & 0+29.
	548-256	548-255	North Dimond at Arctic Blvd.	18	CMP	Yes	7/22/2017	38	51	Downstream	4	Minimal	Pipe cleaned 7/22/17. Corrosion holes & fractures, between 4:00 to 6:00 position, Sta. 0+06 to 0+10 & Sta. 0+25 to 0+35.
	548-255	548-254	North Dimond at Arctic Blvd.	18	CMP	No	7/22/2017	30	104	Upstream	3	2" to 3"	Damaged area blocking camera, survey abandon. Damage of pipe at 10:00 to 1:00 position. Appears that an external repair band has been placed on the pipe.
	548-254	548-253	South Dimond at Arctic Blvd.	18	CMP	Yes	7/22/2017	49	59	Downstream	2	2" to 12"	Corrosion w/some metal loss at water-air interface. Displaced gasket at joint Sta. 0+26.
	548-258A	548-253	South Dimond east of Arctic Blvd.	18	CMP	Yes	8/2/2017	276	286	Downstream	3	Minimal	Evidence of corrosion in invert, multiple deformations, evidence of joint infiltration, possible sag at 33 LF
	548-262	548-258A	South Dimond west of Vernon Street	18	CMP	Yes	8/2/2017	52	59	Upstream	1	None	Varied debris throughout pipe, no defects observed

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10	548-258	548-258A	South Dimond west of Vernon Street	18	CMP	Yes	8/2/2017	29	32	Upstream	1	Minimal	No defects observed
	548-259	548-258	South Dimond at Vernon Street	18	CMP	Yes	8/2/2017	133	136	Upstream	1	None	No defects observed
	1488-43A	1488-43	North Dimond west of C Street	18	CMP	Yes	7/22/2017	7	16	Upstream	1	Minimal	No corrosion interior pipe.
	1488-44	1488-43	Dimond west of C Street	60	CMP	Yes	7/22/2017	104	119	Upstream	2	5"	Minor corrosion occurs between 7:00 to 5:00 position for the length of the pipe.
	1488-43	1488-11	North Dimond west of C Street	60	CMP	Yes	7/22/2017	140	169	Downstream	2	5" to 10"	Minor corrosion occurs between 8:00 to 4:00 position for the length of the pipe.
11	1488-12	1488-11	Dimond at C Street	72	CMP	Yes	7/22/2017	204	193	Downstream	2	1" to 2"	Corrosion w/some material loss 5:00 to 7:00 position, intermittently for the length of the pipe.
	1488-13	1488-12	South Dimond east of C Street	72	CMP	Yes	7/22/2017	245	282	Upstream	3	1" to 2"	Corrosion fracture & holes 7:00 position Sta. 2+26 to 2+30. Minor corrosion 5:00 to 7:00 length of pipe. Metal Structure top pipe 0+55.
	1488-14	1488-13	South Dimond east of C Street	72	CMP	Yes	8/2/2017	305	288	Downstream	3	2" to 3"	Multiple holes in pipe, intermittent corrosion and discoloration, evidence of infiltration at joint, invert appears to be in poor condition
	1488-15	1488-14	South Dimond west of King Street	72	CMP	Yes	8/2/2017	264	276	Upstream	3	2" to 3"	Multiple holes in invert, various degrees of corrosion and discoloration throughout pipe
	1488-16	1488-15	South Dimond west of King Street	72	CMP	Yes	8/3/2017	266	276	Downstream	3	2" to 4"	Multiple potential sags in pipe, mineralization at joints, corrosion and discoloration throughout pipe
12	1488-17	1488-16	South Dimond at King Street	58x94	Arch	Yes	8/3/2017	284	296	Upstream	2	1" to 2"	Joint infiltration/mineralization, discoloration/corrosion near arch base
	1488-37	1488-17	Dimond east of King Street	18	CMP	Yes	8/3/2017	86	99	Upstream	1	None	Minor deformations, minimal corrosion and debris
	1488-18	1488-17	South Dimond east of King Street	58x94	Arch	Yes	8/3/2017	474	484	Upstream	1	2-3"	Evidence of joint infiltration, no major defects observed
	1488-23	1488-22	North Dimond east of King Street	12	CMP	Yes	5/24/2018	46	54	Upstream	1	None	Fin Drain. Probed downstream invert, metal appeared sound. Debris in upstream and downstream ends
	1488-23	1488-22	North Dimond east of King Street	18	CMP	Yes	5/25/2018	44	49	Downstream	1	Minimal	No major defects observed, discoloration in invert, minimal debris

CR NHS Storm Drain Condition Report
Proj. No. 0A31055 / Z591280000

	NHS Storm Drain Inspections Dimond Blvd. (Jewel Lake to Old Seward)				Defect grades: 0=No Defect, 1=Minor Defect, 2=Minor to Moderate Defect, 3=Moderate Defect, 4=Significant Defect, 5=Most Significant Defect								2017 Inspections
													2018 Inspections
Page # in Appendix A	Upstream Structure No.	Downstream Structure No.	Location	Pipe Dia. (in.)	Material	CCTV Complete	CCTV Date	CCTV Length (ft.)	GIS Length (ft.)	CCTV Direction	General Condition Grade Score	Flow Depth (in.)	Additional Comments
12	1488-22	1488-18	South Dimond east of King Street	12	CMP	No	5/24/2018	12	52	Downstream	2	None	Fin Drain. Pipe end deflection at 12' prevented camera pass, probed upstream invert, metal appeared sound
	1488-22	1488-18	South Dimond east of King Street	18	CMP	No	8/3/2017	29	49	Upstream	1	None	Pipe appears to be in good condition, debris depth prevented survey completion, unable to verify invert condition, zoomed to end to complete inspection
	1488-24	1488-23	North Dimond at Schoon St.	12	CMP	Yes	5/25/2018	370	393	Upstream & Downstream	3	Minimal	Fin Drain, water in pipe from jetter, sag, surface corrosion, offset joints, pipe cleaned to perform inspection
	1488-21	1488-22	Dimond at Schoon St.	12	CMP	Yes	5/24/2018	394	392	Upstream	2	None	Probed downstream invert, metal appeared sound, debris buildup, discoloration and corrosion
	1488-19	1488-18	South Dimond at Schoon St.	58x94	Arch	Yes	8/3/2017	381	392	Upstream	1	2-3"	Joint infiltration/mineralization, discoloration/corrosion near arch base
13	1488-24	1488-21	North Dimond west of Dimond Center Dr.	18	CMP	Yes	5/25/2018	50	57	Downstream	2	Minimal	Zoomed to complete inspection, debris and discoloration in pipe, joint infiltration, deflection at Sta. 0+48
	1488-21	1488-19	South Dimond west of Dimond Center Dr.	18	CMP	Yes	8/3/2017	23	38	Upstream	1	1" to 2"	Minor corrosion, 2-3" of debris and water mixed, no major defects observed
	1488-26	1488-24	North Dimond west of Dimond Center Dr.	12	CMP	Yes	5/24/2018	276	283	Upstream	2	None	Fin Drain, surface corrosion and discoloration, roots/organic coming through joints, minimal debris in pipe
	1488-27	1488-21	Dimond west of Dimond Center Dr.	12	CMP	Yes	5/24/2018	252	272	Downstream	2	None	Fin Drain, evidence of corrosion in invert, debris in pipe
	1488-32	1488-19	South Dimond west of Dimond Center Dr.	58x94	Arch	Yes	8/3/2017	154	163	Upstream	2	2' to 3"	Joint infiltration/mineralization, discoloration/corrosion near arch base, spigot end bent at 32 LF with soil visible
	1488-29	1488-32	South Dimond west of Dimond Center Dr.	64	CMP	Yes	7/6/2018	109	119	Downstream	2	3" to 4"	Invert probed, evidence of metal loss/corrosion in invert, mineral buildup at joints, no major structural defects
	1488-29	1488-32	South Dimond west of Dimond Center Dr.	12	CMP	No	7/6/2018	N/A - QuickView	122	Upstream	1	None	Fin Drain. No apparent defect from QuickView footage, 1" debris in pipe

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	NHS Storm Drain Inspections Dimond Blvd. (Jewel Lake to Old Seward)				Defect grades: 0=No Defect, 1=Minor Defect, 2=Minor to Moderate Defect, 3=Moderate Defect, 4=Significant Defect, 5=Most Significant Defect								2017 Inspections
													2018 Inspections
Page # in Appendix A	Upstream Structure No.	Downstream Structure No.	Location	Pipe Dia. (in.)	Material	CCTV Complete	CCTV Date	CCTV Length (ft.)	GIS Length (ft.)	CCTV Direction	General Condition Grade Score	Flow Depth (in.)	Additional Comments
13	1488-26	1488-27	North Dimond west of Dimond Center Dr.	12	CMP	Yes	5/24/2018	50	44	Upstream	1	None	Fin Drain, minor debris no major defects observed
	1488-26	1488-27	North Dimond west of Dimond Center Dr.	18	CMP	Yes	7/7/2018	47	44	Downstream	1	None	Minor debris, possible invert corrosion, no major defects observed
	1488-29	1488-27	South Dimond west of Dimond Center Dr.	18	CMP	Yes	7/6/18 and 7/7/18	65	67	Upstream/Downstream	2	Minimal	Debris prevented downstream completion, finished from upstream end, unknown pipe found in pipe wall
	1488-29	1488-27	South Dimond west of Dimond Center Dr.	12	CMP	Yes	5/24/2018	64	74	Upstream	1	None	Fin Drain, minor debris no major defects observed
	1488-28	1488-29	South Dimond at Dimond Center Dr.	64	CMP	Yes	7/6/2018	227	232	Upstream	2	3" to 4"	Invert probed, evidence of metal loss, possible ovality, mineral buildup at joints, separation at joints
	1488-30	1488-29	South Dimond at Dimond Center Dr.	15	CPEP	N/A	7/6/2018	N/A - QuickView	59	Upstream	1	Minimal	No defects observed
	1488-187	1488-28	South Dimond east of Dimond Center Dr.	64	CMP	Yes	7/6/2018	247	253	Downstream	2	2" to 3"	Evidence of corrosion in invert, mineral buildup at joints, separation at joints
	1488-188	1488-187	Dimond east of Dimond Center Dr.	18	CMP	Yes	7/7/2018	93	100	Downstream	1	None	Debris buildups, possible bellies, minor surface corrosion in invert
	1488-191	1488-187	South Dimond east of Dimond Center Dr.	64	CMP	Yes	7/6/2018	244	253	Upstream	3	2" to 3"	Spot corrosion/pinholes throughout pipe, evidence of corrosion in invert
	1488-192	1488-191	Dimond west of Old Seward	18	CMP	No	7/7/2018	40	107	Downstream	1	Minimal	Pipe half full of debris at 40 LF, requires cleaning to complete inspection
14	1488-195	1488-191	South Dimond west of Old Seward	64	CMP	Yes	7/6/2018	286	291	Downstream	3	2" to 3"	Spot corrosion/pinholes throughout pipe, evidence of corrosion in invert
	1488-235	1488-195	Dimond west of Old Seward	18	CMP	Yes	7/7/2018	72	129	Downstream	1	None	Minor pipe defects, debris in pipe, requires cleaning to verify invert condition, camera zoomed to complete inspection

CR NHS Storm Drain Condition Report
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Page # in Appendix A	Upstream Structure No.	Downstream Structure No.	Location	Pipe Dia. (in.)	Material	CCTV Complete	CCTV Date	CCTV Length (ft.)	GIS Length (ft.)	CCTV Direction	General Condition Grade Score	Flow Depth (in.)	Additional Comments
14	1488-196	1488-195	South Dimond west of Old Seward	64	CMP	Yes	7/6/2018	286	288	Upstream	3	2" to 3"	Spot corrosion/pinholes throughout pipe, invert probed, evidence of corrosion/metal loss in invert
	1488-206	1488-196	Dimond at Old Seward	24	CMP	Yes	7/6/2018	111	119	Upstream	2	1"-2"	Infiltration evidence at joints, possible pipe bellies
	1488-207	1488-206	North Dimond at Old Seward	24	CMP	Yes	7/7/2018	105	121	Upstream	2	1-2"	Evidence suggests pipe bellies, debris buildup, infiltration at joints, discoloration in invert
	1488-213	1488-196	South Dimond at Old Seward	24	CMP	Yes	7/6/2018	185	191	Upstream	3	1" to 2"	Mineralization at joints, pinholes with infiltration, evidence of corrosion in invert
	1488-213A	1488-196	South Dimond at Old Seward	28	CMP	Yes	7/6/2018	107	112	Upstream	2	1"	Mineralization at joints, minimal debris in pipe, 3 horizontal deflections in pipe

Main Inspection with Pipe-Run Graph

Project Name: NHS Storm Project		Mainline ID: 1492-26 to 1492-25		City: Anchorage	Address: Dimond
Start date/time: 5/25/18	Pipe width: 30	Pipe height: CMP	Surface condition:	Weather:	
Direction: UPSTREAM	Surveyed footage: 136.1	Operator: Cody England		Comments:	

Notes: 1492-26 to 1492-25

- 30-inch CMP
- 136 LF

- Physically probed downstream invert, evidence of surface corrosion in invert throughout pipe
- Evidence of infiltration throughout pipe
- 1-3" of debris in pipe
- Evidence of infiltration 4:00 position Sta. 0+23
- Evidence of infiltration at joint Sta. 0+27, 0+32, 0+65, 0+82
- Evidence of infiltration/corrosion 4:00 and 8:00 position Sta. 0+41
- Evidence of infiltration 3:00 position Sta. 0+50
- Possible hole in invert at Sta. 0+60
- Evidence of infiltration at 4:00 position Sta. 0+65
- Evidence of pipe belly from Sta. 0+60 to Sta. 0+70
- 1-2" deflection 2:00 position Sta. 0+77
- Flow: 1" to 2"
- Grade score of: 3



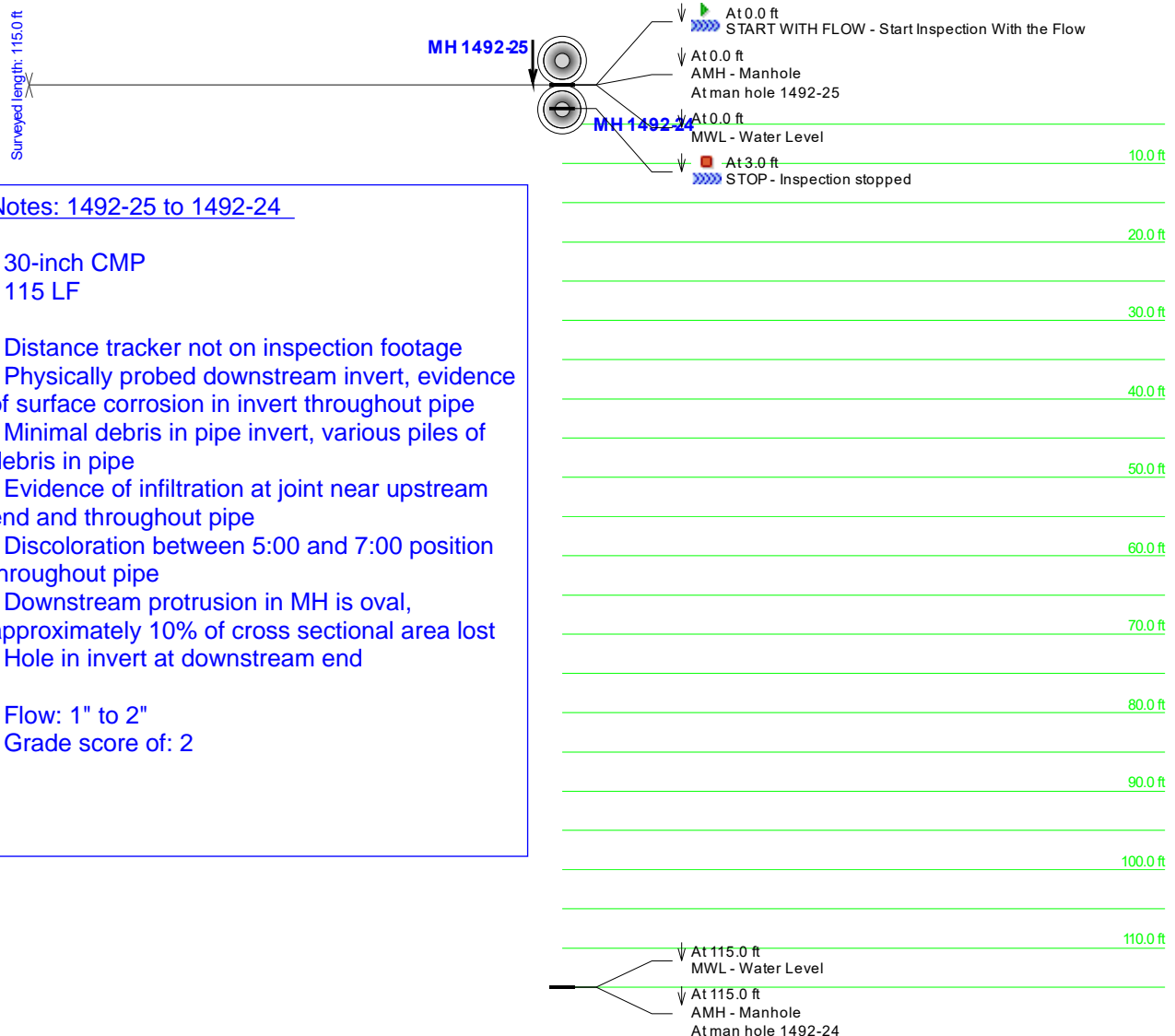
Surveyed length: 136.1 ft

MH 1492-26

MH 1492-25

Main Inspection with Pipe-Run Graph

Project Name: NHS Storm Project	Mainline ID: MH 1492-25 - MH 1492-24	City: Anchorage	Address: Dimond
Start date/time: 5/25/2018	Pipe width: 30	Pipe height: CMP	Surface condition: Weather:
Direction: Downstream	Surveyed footage: 115.0	Operator: Cody England	Comments

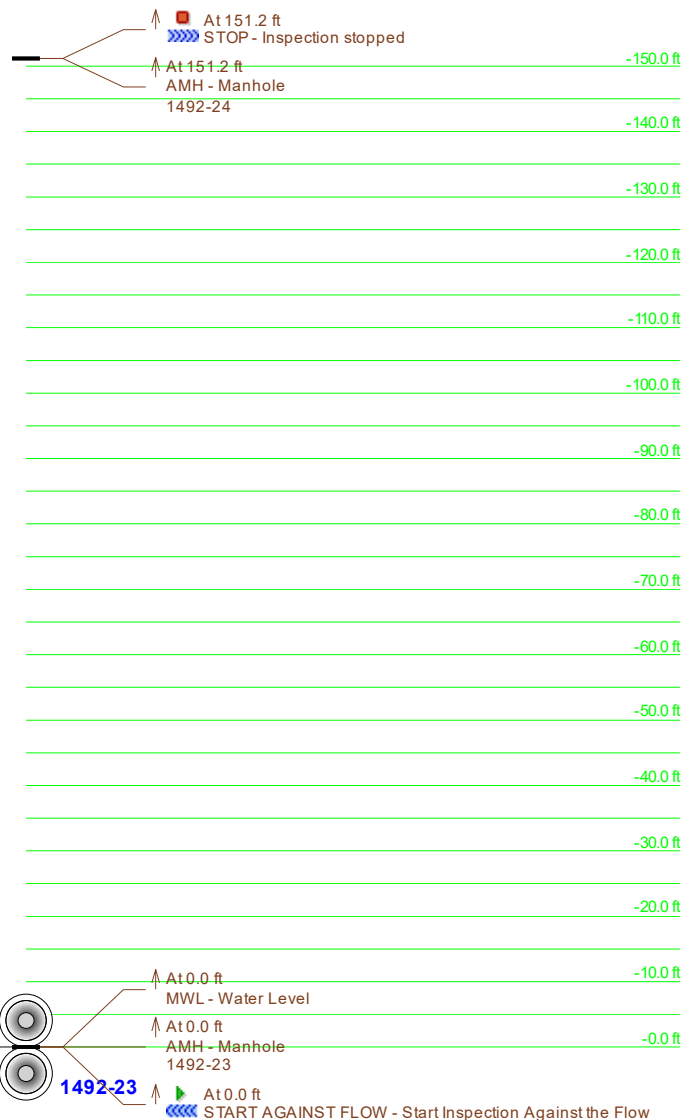


Main Inspection with Pipe-Run Graph

Project Name: Dimond DOT 2017	Mainline ID: 1492-24 to 1492-23	City: Anchorage	Address: Dimond Blvd
Start date/time: 7/24/2017	Pipe width: 30	Pipe height: 30	Pipe type: CMP
Direction: UPSTREAM	Surveyed footage: 151.2	Operator: Brandon Markson	Comments:

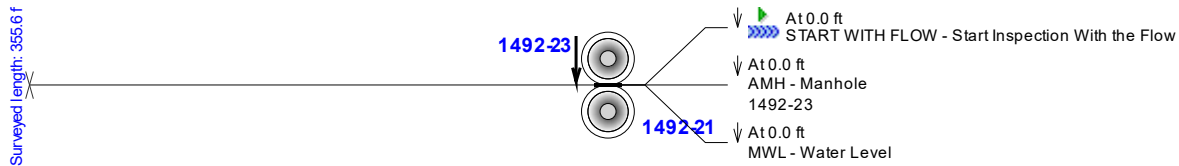
Notes: 1492-24 to 1492-23

- 30-in. CMP
- 151 LF
- Numerous corrosion spots (0.5" to 3" Dia.)w/material loss, some w/pin holes, 7:00 to 5:00 position, mainly between Sta. 0+00 to 0+80.
- Most joints have leaks with mineral buildup.
- Deformation 1:00 position Sta.1+23 < 5% flow reduction, no corrosion.
- Flow: 1" over 2" debris/mud.
- Grade score of: 3



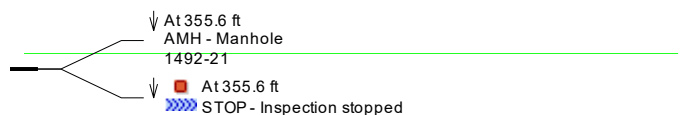
Main Inspection with Pipe-Run Graph

Project Name: Dimond DOT 2017	Mainline ID: 1492-23 - 1492-21	City: Anchorage	Address: Dimond Blvd
Start date/time: 7/24/2017	Pipe width: 	Pipe height: 30	Pipe type: CMP
Direction: Downstream	Surveyed footage: 355.6	Operator: Brandon Markson	Comments:



Notes: 1492-23 to 1492-21

- 30-in. CMP
- 356 LF
- Numerous corrosion spots (0.5" to 3" Dia.)w/material loss & w/pin holes, 7:00 to 5:00 position, mainly between Sta. 0+00 to 0+97 but w/intermittent groupings of spots.
- Most joints have leaks with mineral buildup.
- Flow: 1" over 2" debris/mud.
- Grade score of: 3



Main Inspection with Pipe-Run Graph

Project Name: Dimond DOT 2017	Mainline ID: 1492-21 to 1492-20	City: Anchorage	Address: Dimond Blvd
Start date/time: 7/24/2017	Pipe width: 30	Pipe type: CMP	Surface condition:
Direction: UPSTREAM	Surveyed footage: 252.3	Operator: Brandon Markson	Weather:

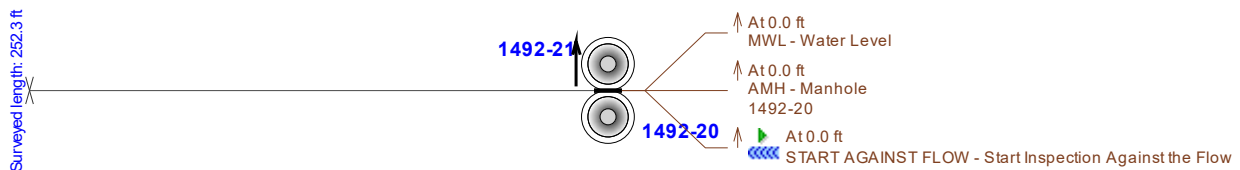


Notes: 1492-21 to 1492-20

- 30-in. CMP
- 252 LF
- Corrosion spots (0.5" to 3" Dia.)w/material loss & w/pin holes, Sta. 0+01 & 0+14 & 0+32.
- Most joints have leaks with mineral buildup.
- Possible fracture at 5:00 position, Sta. 1+55.
- Flow: 2"
- Grade score of: 3

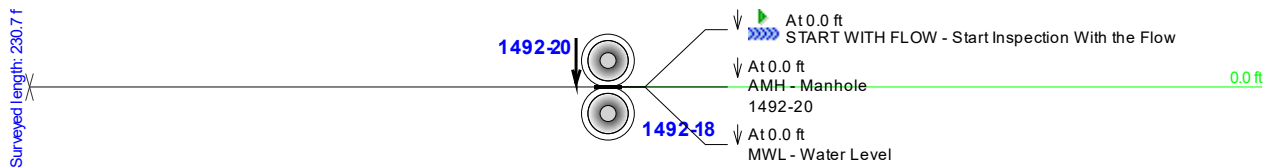
-200.0 ft

-100.0 ft



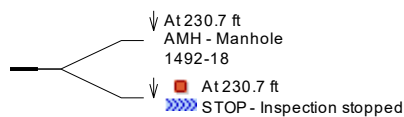
Main Inspection with Pipe-Run Graph

Project Name: Dimond DOT 2017	Mainline ID: 1492-20 - 1492-18	City: Anchorage	Address: Dimond Blvd
Start date/time: 7/24/2017	Pipe width: 30	Pipe type: CMP	Surface condition:
Direction: Downstream	Surveyed footage: 230.7	Operator: Brandon Markson	Weather:



Notes: 1492-20 to 1492-18

- 30-in. CMP
- 231 LF
- Corrosion spots (0.5" to 2" Dia.)w/material loss & w/eight plus pin holes, along length of pipe.
- Half of the joints have leaks with mineral buildup.
- Flow: 1"
- Grade score of: 3

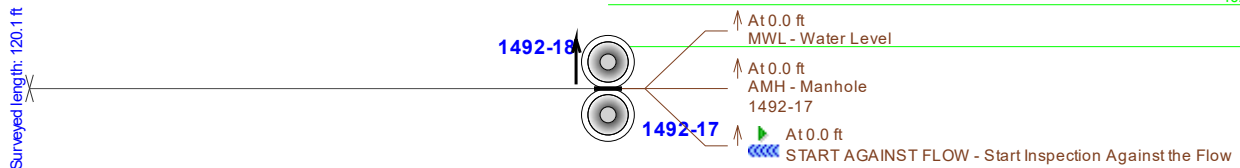


Main Inspection with Pipe-Run Graph

Project Name: Dimond DOT 2017	Mainline ID: 1492-18 to 1492-17	City: Anchorage	Address: Dimond Blvd
Start date/time: 7/24/2017	Pipe width: 	Pipe height: 30	Pipe type: CMP
Direction: UPSTREAM	Surveyed footage: 120.1	Operator: Brandon Markson	Comments:

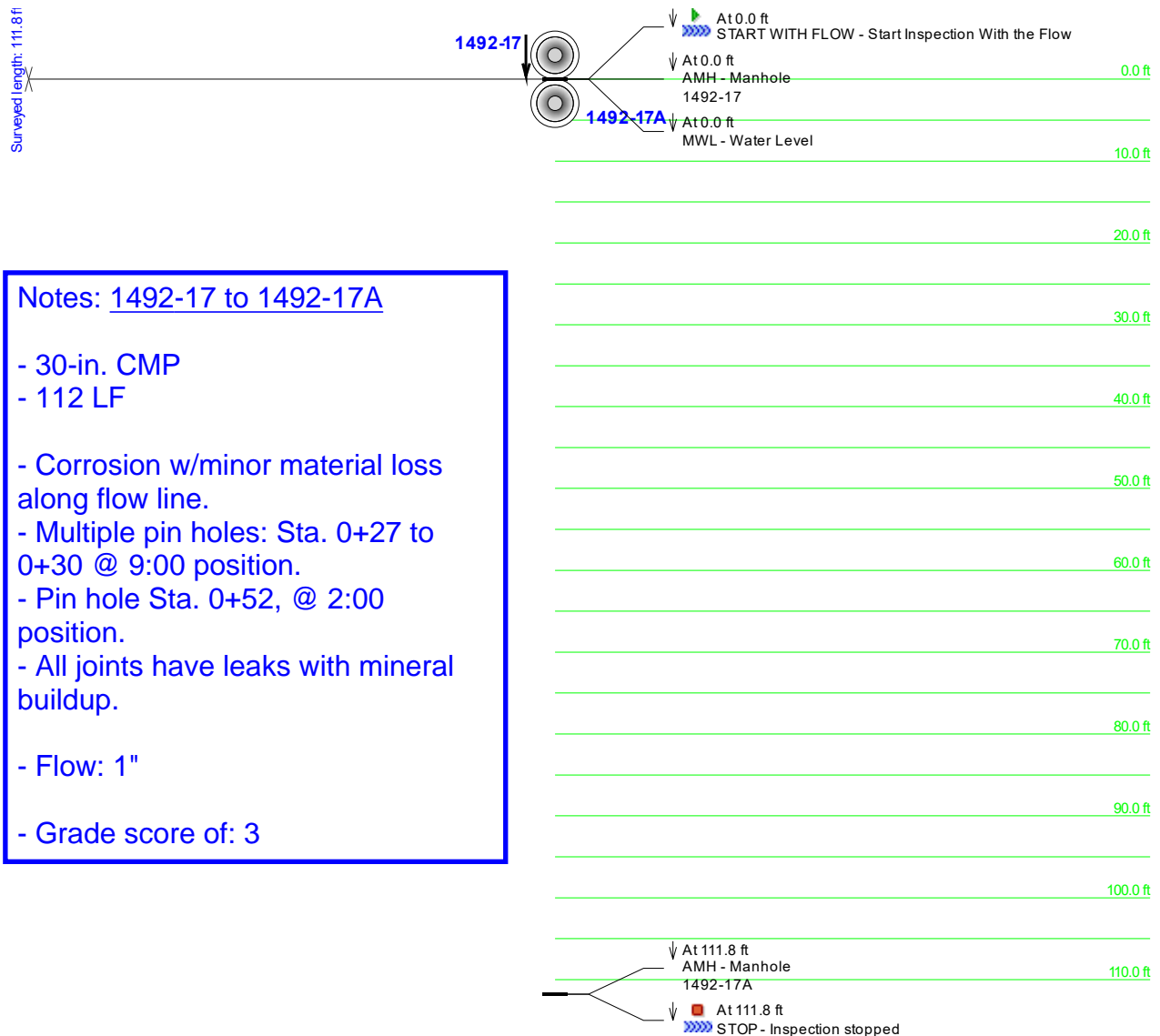
Notes: 1492-18 to 1492-17

- 30-in. CMP
- 120 LF
- Corrosion w/minor material loss along flow line.
- Two pin holes: Sta. 0+04 @ 3:00 position & Sta. 0+56 @ 5:00 position.
- All joints have leaks with mineral buildup.
- Flow: Minimal
- Grade score of: 2



Main Inspection with Pipe-Run Graph

Project Name: Dimond DOT 2017	Mainline ID: 1492-17 to 1492-17A	City: Anchorage	Address: Dimond Blvd
Start date/time: 7/24/2017	Pipe width: 30	Pipe height: 30	Pipe type: CMP
Direction: Downstream	Surveyed footage: 111.8	Operator: Brandon Markson	Comments:

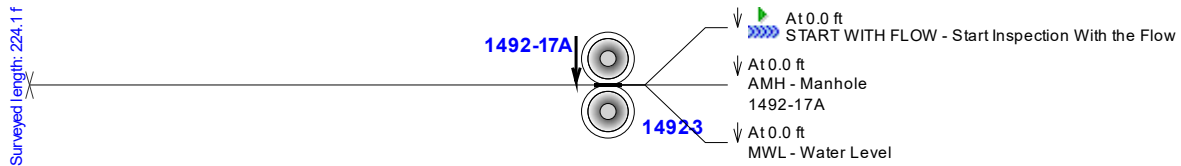


CUES, Inc.
 3600 Rio Vista Avenue
 Orlando, FL 32805
 Phone: 407-849-0190
 Fax: 407-425-1569



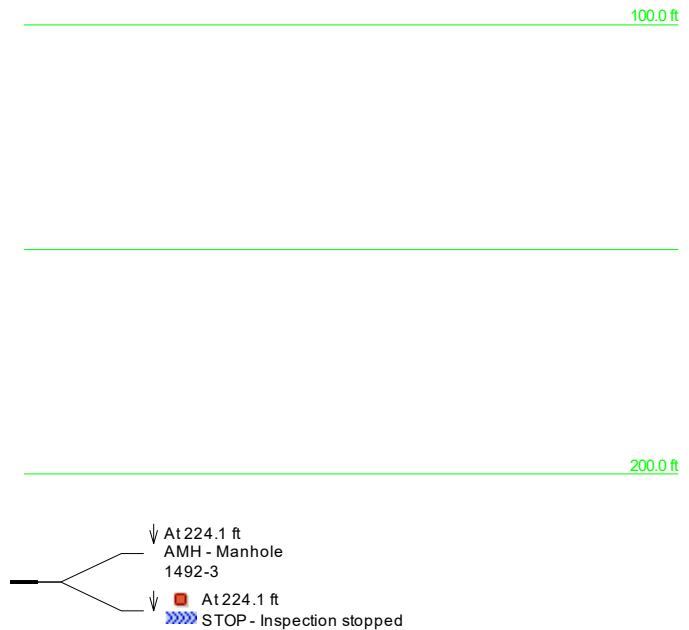
Main Inspection with Pipe-Run Graph

Project Name: Dimond DOT 2017	Mainline ID: 1492-17A - 1492-3	City: Anchorage	Address: Dimond Blvd
Start date/time: 7/24/2017	Pipe width: 30	Pipe height: 30	Pipe type: CMP
Direction: Downstream	Surveyed footage: 224.1	Operator: Brandon Markson	Comments:



Notes: 1492-17A to 1492-3

- 30-in. CMP
- 224 LF
- 8% ovality from Sta. 1+10 to 1+60.
- Corrosion w/minor material loss
- 2 to 3 joints have leaks with mineral buildup.
- Flow: Minimal
- Grade score of: 3

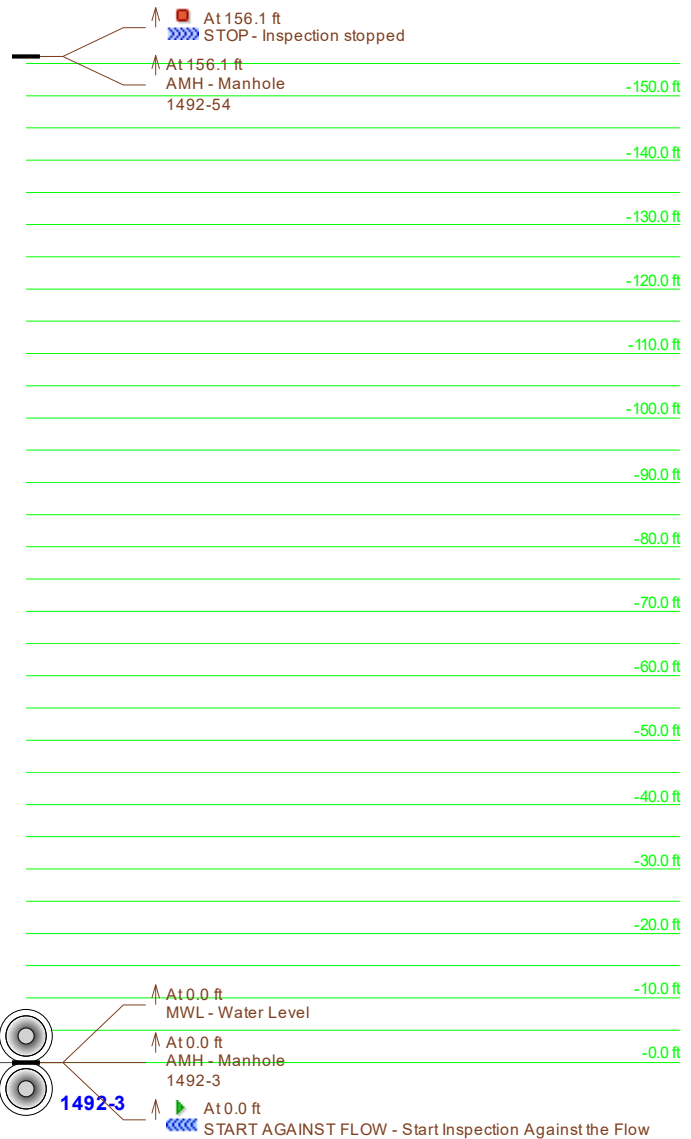


Main Inspection with Pipe-Run Graph

Project Name: Dimond DOT 2017	Mainline ID: 1492-54 to 1492-3	City: Anchorage	Address: Dimond Blvd
Start date/time: 7/24/2017	Pipe width: 	Pipe height: 18	Pipe type: CMP
Direction: UPSTREAM	Surveyed footage: 156.1	Operator: Brandon Markson	Comments:

Notes: 1492-54 to 1492-3

- 18-in. CMP
- 156 LF
- Discoloration & some corrosion in the invert.
- Flow: Minimal
- Grade score of: 1



Main Inspection with Pipe-Run Graph

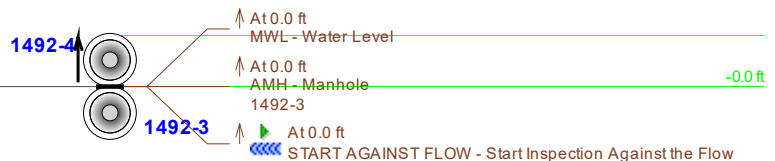
Project Name: Dimond DOT 2017	Mainline ID: 1492-4 to 1492-3	City: Anchorage	Address: Dimond Blvd
Start date/time: 7/24/2017	Pipe width: 18	Pipe height: 18	Pipe type: CMP
Direction: UPSTREAM	Surveyed footage: 98.3	Operator: Brandon Markson	Comments:

Notes: 1492-4 to 1492-3

- 18-in. CMP
- 98 LF
- Discoloration & some corrosion in the invert.
- Flow: Minimal
- Grade score of: 1

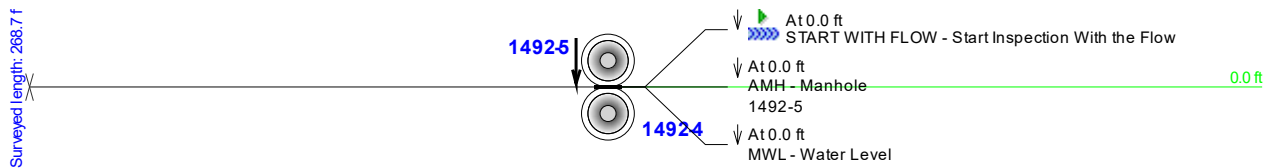


Surveyed length: 98.3 ft



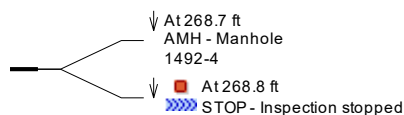
Main Inspection with Pipe-Run Graph

Project Name: Dimond DOT 2017	Mainline ID: 1492-5 - 1492-4	City: Anchorage	Address: Dimond Blvd
Start date/time: 7/25/2017	Pipe width: 	Pipe height: 18	Pipe type: CMP
Direction: Downstream	Surveyed footage: 268.7	Operator: Brandon Markson	Comments:



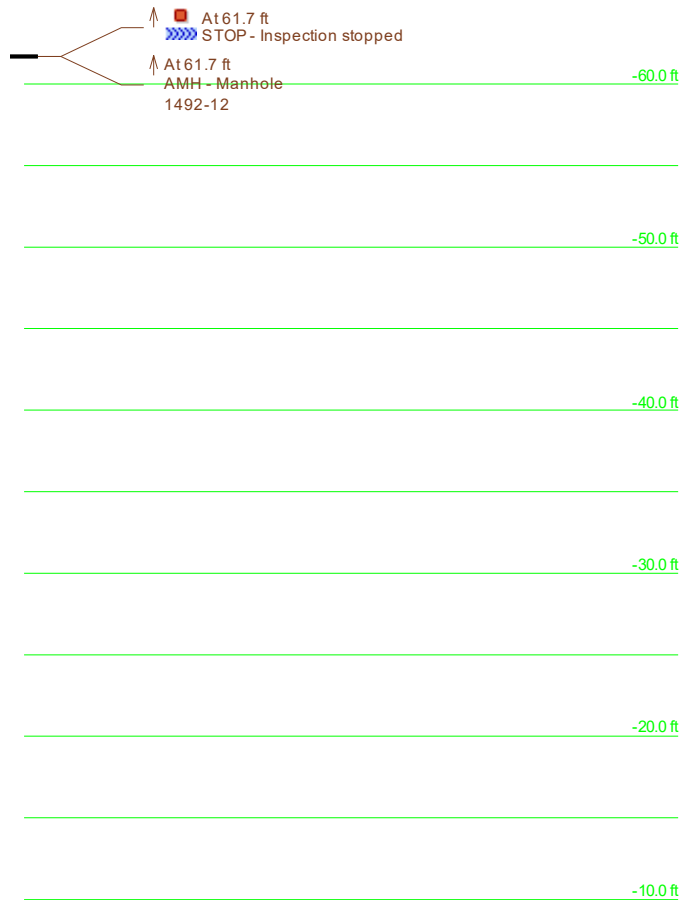
Notes: 1492-5 to 1492-4

- 18-in. CMP
- 269 LF
- Discoloration & some corrosion in the invert.
- Evidence of corrosion holes or fractures 5:00 to 7:00 position: Sta. 1+50, 1+90, 2+10 & 2+50.
- Require cleaning to confirm.
- Flow: 1"
- Grade score of: 3



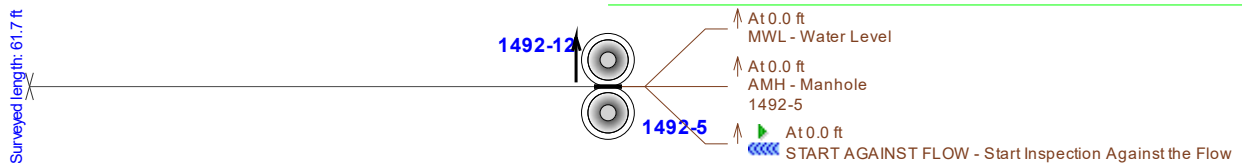
Main Inspection with Pipe-Run Graph

Project Name: Dimond DOT 2017	Mainline ID: 1492-12 to 1492-5	City: Anchorage	Address: Dimond Blvd
Start date/time: 7/25/2017	Pipe width: 18	Pipe height: 18	Pipe type: CMP
Direction: UPSTREAM	Surveyed footage: 61.7	Operator: Brandon Markson	Comments:



Notes: 1492-12 to 1492-5

- 18-in. CMP
- 62 LF
- Discoloration & some corrosion with metal loss in the invert.
- Flow: Minimal
- Grade score of: 2



Main Inspection with Pipe-Run Graph

Project Name: Dimond DOT 2017	Mainline ID: 1492-6 to 1492-5	City: Anchorage	Address: Dimond Blvd
Start date/time: 7/25/2017	Pipe width: 18	Pipe height: 18	Pipe type: CMP
Direction: UPSTREAM	Surveyed footage: 295.8	Operator: Brandon Markson	Comments:

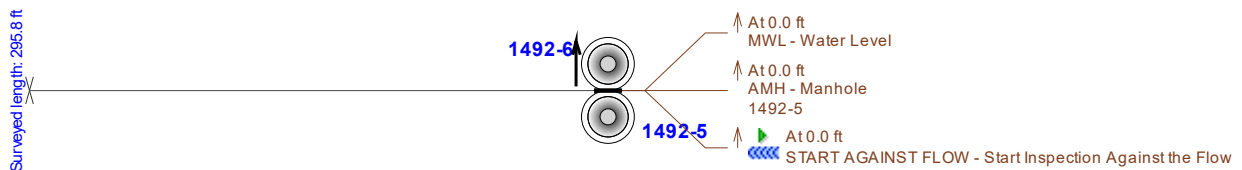


Notes: 1492-6 to 1492-5

- 18-in. CMP
- 296 LF
- Discoloration & some corrosion with metal loss in the invert.
- Flow: Minimal
- Grade score of: 2

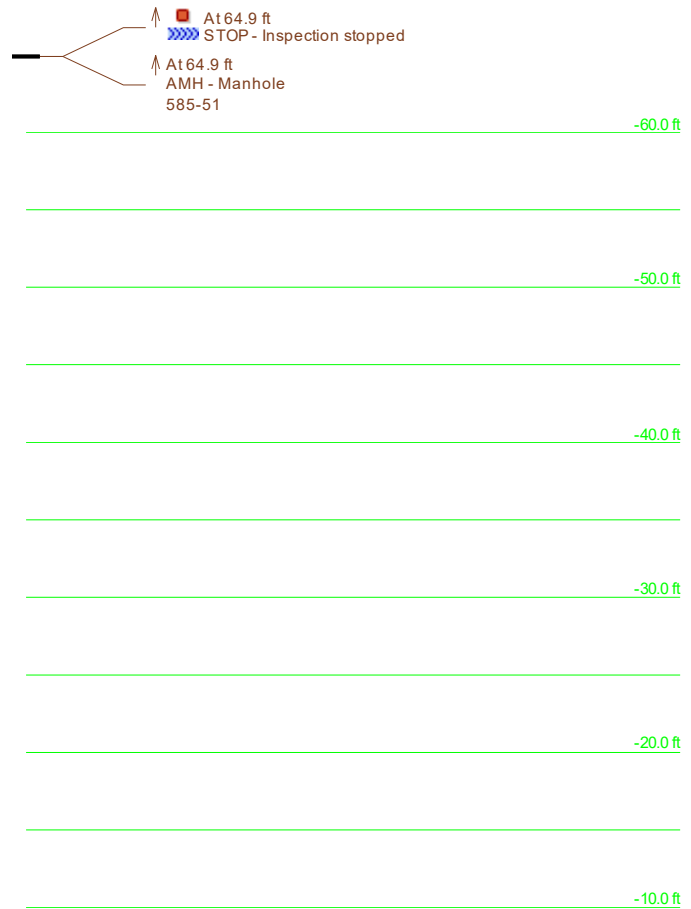
-200.0 ft

-100.0 ft



Main Inspection with Pipe-Run Graph

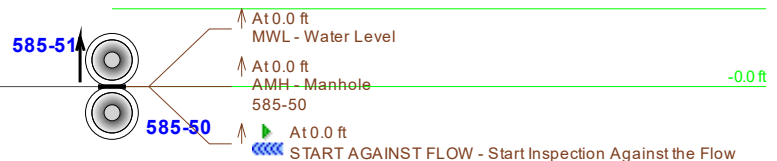
Project Name: Dimond DOT 2017	Mainline ID: 585-51 to 585-50	City: Anchorage	Address: Dimond Blvd
Start date/time: 7/22/2017	Pipe width: 18	Pipe height: 18	Pipe type: CMP
Direction: UPSTREAM	Surveyed footage: 64.9	Operator: Brandon Markson	Comments:



Notes: 585-51 to 585-50

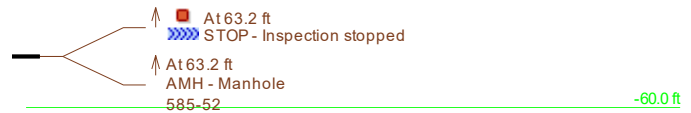
- 18-in. CMP
- 65 LF
- Corrosion w/some metal loss from 5:00 to 7:00 position, for the length of the pipe.
- Pipe cleaned before CCTV
- Flow: Minimal
- Grade score of: 2

Surveyed length: 64.9 ft



Main Inspection with Pipe-Run Graph

Project Name: Dimond DOT 2017	Mainline ID: 585-52 to 585-50	City: Anchorage	Address: Dimond Blvd
Start date/time: 7/22/2017	Pipe width: 	Pipe height: 18	Pipe type: CMP
Direction: UPSTREAM	Surveyed footage: 63.2	Operator: Brandon Markson	Comments:

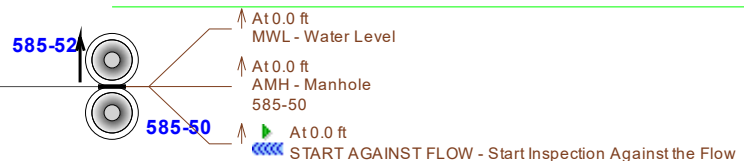


Notes: 585-52 to 585-50

- 18-in. CMP
- 63 LF
- Corrosion w/some metal loss from 5:00 to 7:00 position, Sta. 1+00 to 0+20.
- Joint damaged at 4:00 position, Sta. 0+14.
- Flow: Minimal
- Grade score of: 2



Surveyed length: 63.2 ft

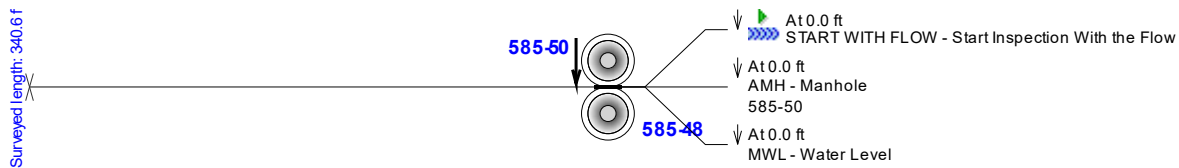


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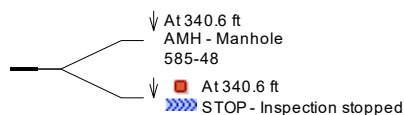
Main Inspection with Pipe-Run Graph

Project Name: Dimond DOT 2017	Mainline ID: 585-50 - 585-48	City: Anchorage	Address: Dimond Blvd
Start date/time: 7/22/2017	Pipe width: 	Pipe height: 18	Pipe type: CMP
Direction: Downstream	Surveyed footage: 340.6	Operator: Brandon Markson	Comments:



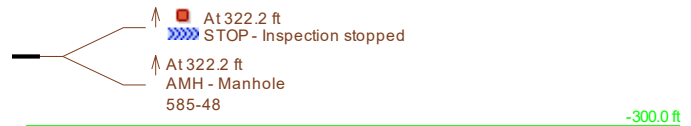
Notes: 585-50 to 585-48

- 18-in. CMP
- 341 LF
- All joints have leaks w/mineral build up.
- Multiple pin hole near joints w/ leaks & mineral buildup.
- Corrosion w/metal loss in invert.
- Fractures/holes: Sta. 0+59; 1+16; 1+89; 2+16 w/possibly more unseen.
- Flow: 1"
- Grade score of: 3



Main Inspection with Pipe-Run Graph

Project Name: Dimond DOT 2017	Mainline ID: 585-48 to 585-36	City: Anchorage	Address: Dimond Blvd
Start date/time: 7/21/2017	Pipe width: 18	Pipe height: 18	Pipe type: CMP
Direction: UPSTREAM	Surveyed footage: 322.2	Operator: Brandon Markson	Comments:

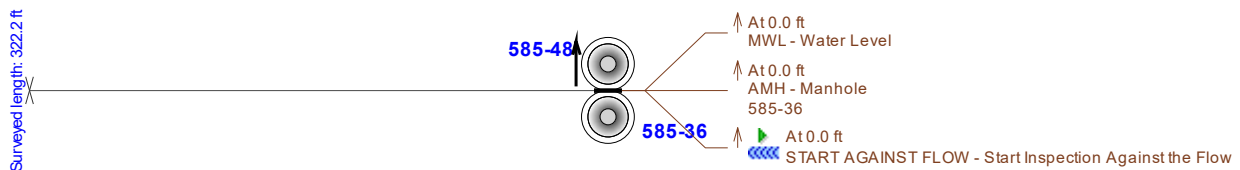


Notes: 585-48 to 585-36

- 18-in. CMP
- 322 LF
- All joints have w/some corrosion, leaks & mineral build-up.
- Flow: 1"
- Grade score of: 2

-200.0 ft

-100.0 ft



Main Inspection with Pipe-Run Graph

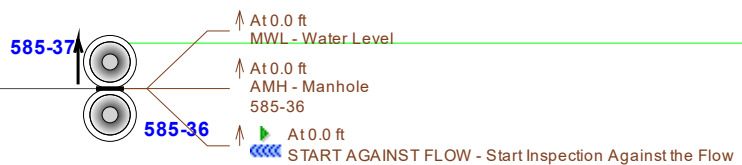
Project Name: Dimond DOT 2017	Mainline ID: 585-37 to 585-36	City: Anchorage	Address: Dimond Blvd
Start date/time: 7/21/2017	Pipe width: 18	Pipe height: 18	Pipe type: CMP
Direction: UPSTREAM	Surveyed footage: 111.1	Operator: Brandon Markson	Comments:

Notes: 585-37 to 585-36

- 18-in. CMP
- 111 LF
- Corrosion w/metal loss & holes, 3:00 to 9:00 position for the length of the pipe.
- Joints w/some corrosion, leaks & mineral build-up.
- Between 585-37 to 585-36:
 - # Approx. 6" high point from Sta. 0+42 to 0+52.
 - # Reverse grade from Sta.0+52 to Sta.0+62.
- Flow: 1" to 6"
- Grade score of: 3



Surveyed length: 111.1 ft





Main Inspection with Pipe-Run Graph

Notes: 585-36 to 585-15

- 18-in. CMP
- 100 LF
- Corrosion w/some metal loss, in invert intermittently for the length of the pipe.
- Joints w/some corrosion, leaks & mineral build-up, Sta. 0+37 & 0+57.
- Horizontal bend to the west Sta. 57 & six increasing vertical grade breaks:

# Sta.0+04	# Sta.0+18
# Sta.0+28	# Sta.0+57
# Sta.0+65	# Sta.0+75

- Flow: 1"
- Grade score of: 2

At 100.3 ft
STOP - Inspection stopped

At 100.3 ft
AMH - Manhole
585-36

-100.0 ft

-90.0 ft

-80.0 ft

-70.0 ft

-60.0 ft

-50.0 ft

-40.0 ft

-30.0 ft

-20.0 ft

-10.0 ft

- Grade score of: 2

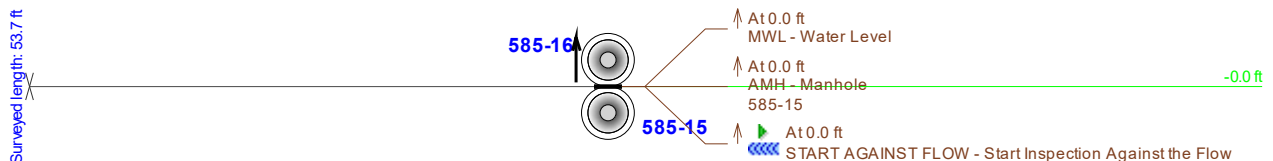


Main Inspection with Pipe-Run Graph

Project Name: Dimond DOT 2017	Mainline ID: 585-16 to 585-15	City: Anchorage	Address: Dimond Blvd
Start date/time: 7/21/2017	Pipe width: 24	Pipe height: 24	Pipe type: CMP
Direction: UPSTREAM	Surveyed footage: 53.7	Operator: Brandon Markson	Comments:

Notes: 585-16 to 585-15

- 24-in. CMP
- 54 LF
- Corrosion w/some metal loss, 5:00 to 7:00 position, for the length of the pipe.
- Joint w/some corrosion, leaks & mineral build-up, Sta. 0+33.
- Vertical grade breaks at:
 - # Sta.0+04
 - # Sta.0+11
 - # Sta.0+16
 - # Sta.0+32
- Flow: 1" to 2"
- Grade score of: 1



Main Inspection with Pipe-Run Graph

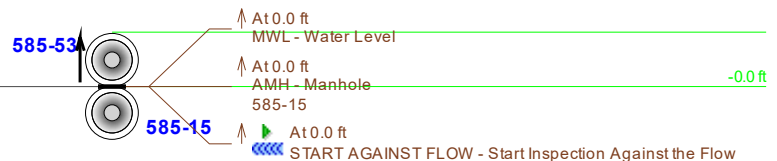
Project Name: Dimond DOT 2017	Mainline ID: 585-53 to 585-15	City: Anchorage	Address: Dimond Blvd
Start date/time: 7/21/2017	Pipe width: 	Pipe height: 18	Pipe type: CMP
Direction: UPSTREAM	Surveyed footage: 92.5	Operator: Brandon Markson	Comments:

Notes: 585-53 to 585-15

- 18-in. CMP
- 93 LF
- Corrosion w/some metal loss, in invert intermittently for the length of the pipe.
- 3-1" deformations, 12:00 position, Sta. 0+32.
- Flow: Minimal
- Grade score of: 2

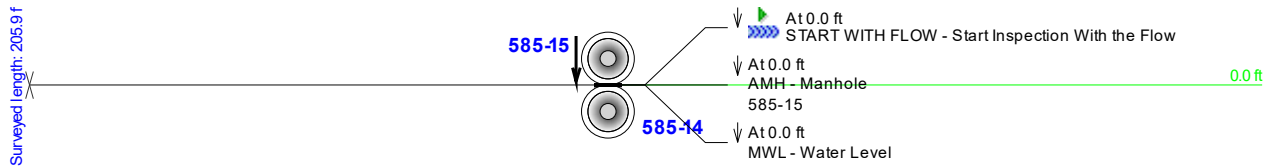


Surveyed length: 92.5 ft



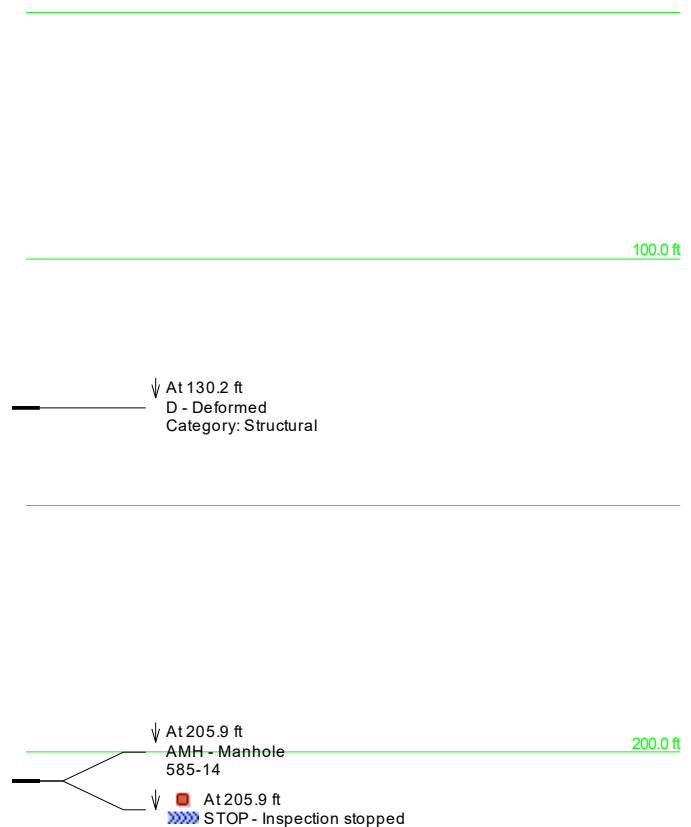
Main Inspection with Pipe-Run Graph

Project Name: Dimond DOT 2017	Mainline ID: 585-15 - 585-14	City: Anchorage	Address: Dimond Blvd
Start date/time: 7/21/2017	Pipe width: 24	Pipe height: 24	Pipe type: CMP
Direction: Downstream	Surveyed footage: 205.9	Operator: Brandon Markson	Weather:
Surface condition: 			
Comments 			



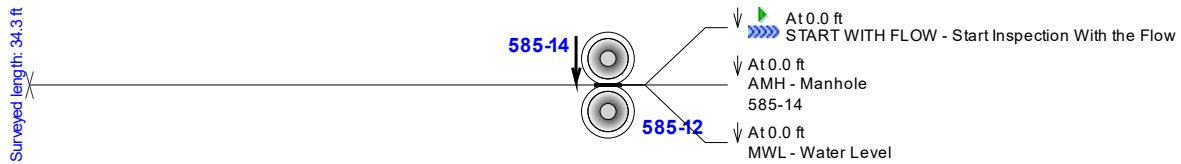
Notes: 585-15 to 585-14

- 24-in. CMP
- 206 LF
- Corrosion w/some metal loss, 5:00 to 7:00 position, for the length of the pipe.
- Multiple joints w/some corrosion, leaks & mineral build-up.
- Deformation at the 5:00 position, 5% flow reduction, Sta. 1+30.
- Flow: 1"
- Grade score of: 2



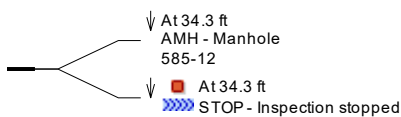
Main Inspection with Pipe-Run Graph

Project Name: Dimond DOT 2017	Mainline ID: <u>585-14 to 585-13</u>	City: Anchorage	Address: Dimond Blvd
Start date/time: 7/21/2017	Pipe width: 	Pipe height: 24	Pipe type: CMP
Direction: Downstream	Surveyed footage: 34.3	Operator: Brandon Markson	Comments:



Notes: 585-14 to 585-13

- 24-in. CMP
- 34 LF
- Corrosion w/some metal loss, 5:00 to 7:00 position, for the length of the pipe.
- Horizontal bend to the north & increase vertical grade break.
- Flow: 1"
- Grade score of: 1



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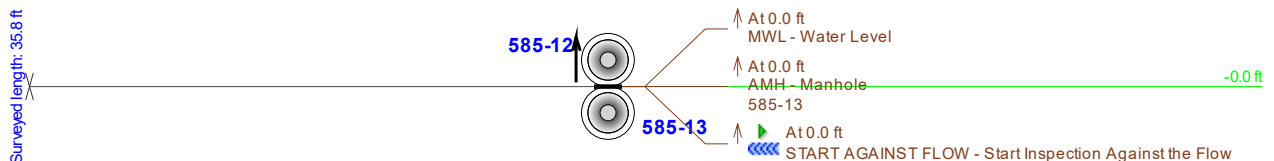
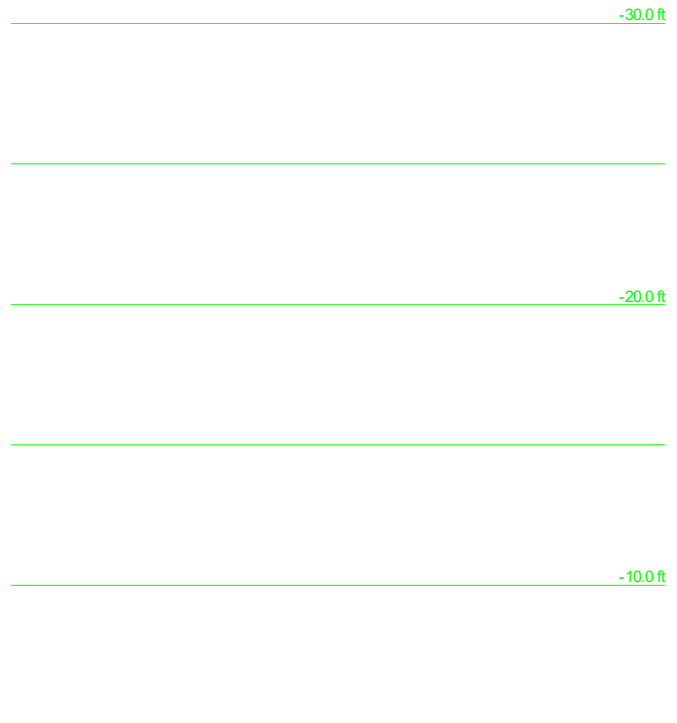
Main Inspection with Pipe-Run Graph

Project Name: Dimond DOT 2017	Mainline ID: 585-13 - 585-12	City: Anchorage	Address: Dimond Blvd
Start date/time: 7/21/2017	Pipe width: 24	Pipe height: 24	Pipe type: CMP
Direction: UPSTREAM	Surveyed footage: 35.8	Operator: Brandon Markson	Comments:



Notes: 585-13 to 585-12

- 24-in. CMP
- 36 LF
- Joints w/corrosion, metal loss & leaking w/some mineral build-up, Sta. 0+15.
- Flow: 1"
- Grade score of: 2



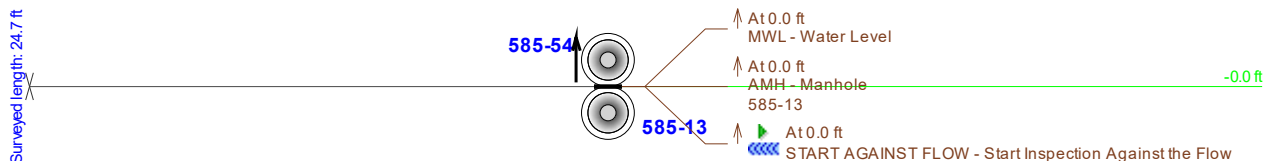
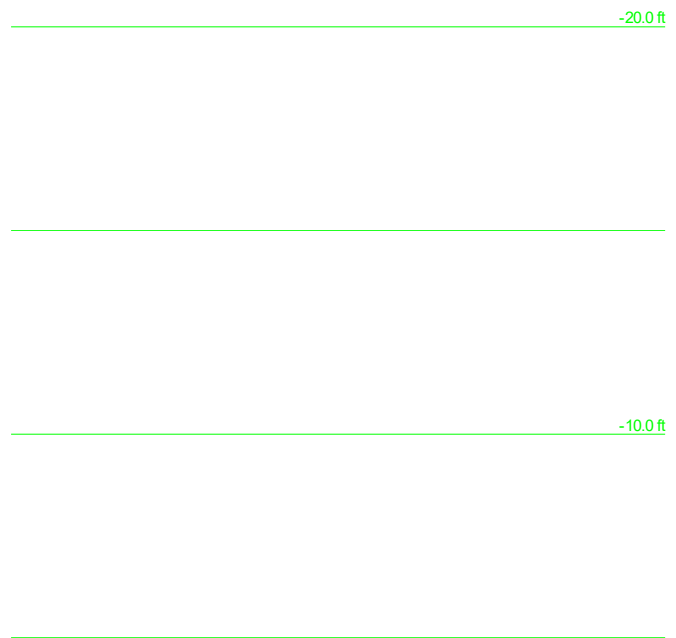
Main Inspection with Pipe-Run Graph

Project Name: Dimond DOT 2017	Mainline ID: 585-54 to 585-12	City: Anchorage	Address: Dimond Blvd
Start date/time: 7/21/2017	Pipe width: 18	Pipe height: 18	Pipe type: CMP
Direction: UPSTREAM	Surveyed footage: 24.7	Operator: Brandon Markson	Comments:



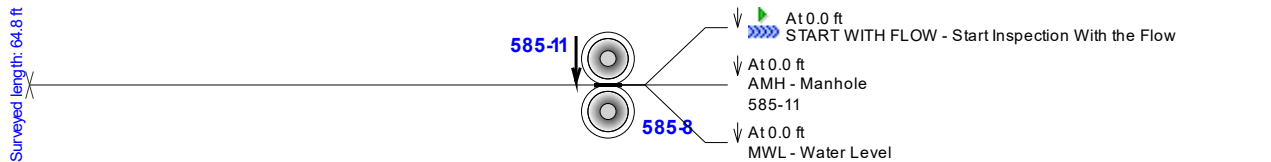
Notes: 585-54 to 585-12

- 18-in. CMP
- 25 LF
- Joint w/corrosion & leaking w/some mineral build-up, Sta. 0+14.
- Flow: 1"
- Grade score of: 1



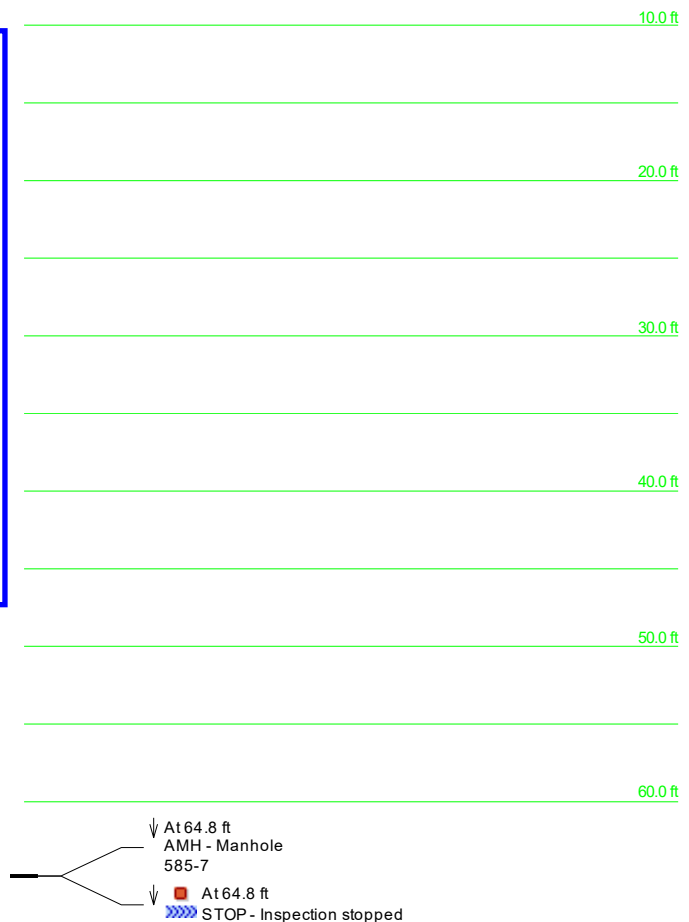
Main Inspection with Pipe-Run Graph

Project Name: Dimond DOT 2017	Mainline ID: 585-11 - 585-7	City: Anchorage	Address: Dimond Blvd
Start date/time: 7/25/2017	Pipe width: 	Pipe height: 18	Pipe type: CMP
Direction: Downstream	Surveyed footage: 64.8	Operator: Brandon Markson	Comments:



Notes: 585-11 to 585-7

- 18-in. CMP
- 65 LF
- Bottom of pipe 5:00 to 7:00 covered w/water & debris. Condition of invert unknown.
- Some corrosion with minor metal loss at 5:00 & 7:00 along length of the pipe.
- Flow: Minimal
- Grade score of: 2



Main Inspection with Pipe-Run Graph

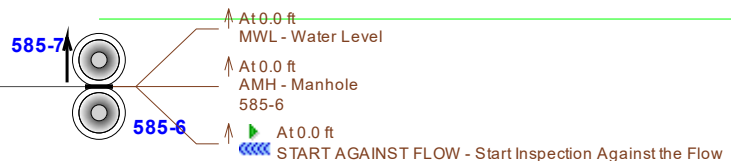
Project Name: Dimond DOT 2017	Mainline ID: 585-7 to 585-6	City: Anchorage	Address: Dimond Blvd
Start date/time: 7/25/2017	Pipe width: 18	Pipe type: CMP	Surface condition:
Direction: UPSTREAM	Surveyed footage: 74.8	Operator: Brandon Markson	Weather:



Notes: 585-7 to 585-6

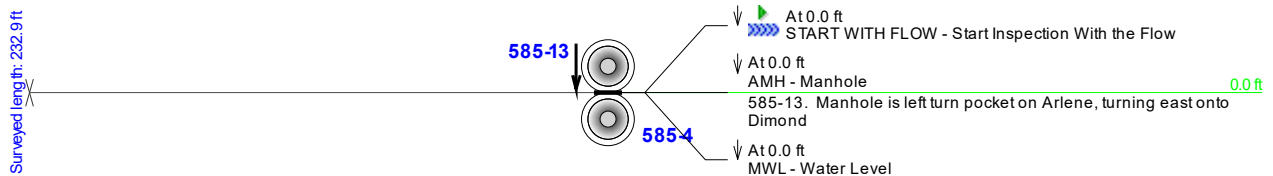
- 18-in. CMP
- 75 LF
- Some corrosion with minor metal loss at 5:00 & 7:00 position along length of the pipe.
- Flow: Minimal
- Grade score of: 2

Surveyed length: 74.8 ft



Main Inspection with Pipe-Run Graph

Project Name: Dimond DOT 2017	Mainline ID: 585-12 to 585-4	City: Anchorage	Address: Dimond Blvd
Start date/time: 7/21/2017	Pipe width: 30	Pipe height: 30	Pipe type: CMP
Direction: Downstream	Surveyed footage: 232.9	Operator: Brandon Markson	Comments:



Notes: 585-12 to 585-4

- 30-in. CMP
- 233 LF
- Corrosion w/some metal loss in invert, for the length of the pipe.
- Joints w/ corrosion, metal loss & leaking w/mineral build-up.
- # Sta. 0+15.
- # Sta. 0+35.
- # Sta. 0+77.
- # Sta. 1+17.
- Three 1" corroded holes, 9:00 position, Sta. 0+90.
- Flow: 1"
- Grade score of: 3



Main Inspection with Pipe-Run Graph

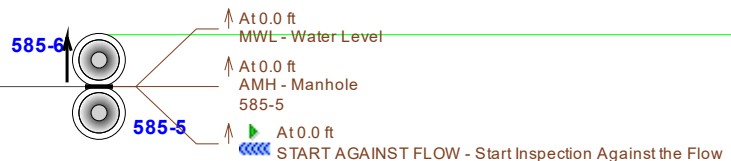
Project Name: Dimond DOT 2017	Mainline ID: 585-6 to 585-5	City: Anchorage	Address: Dimond Blvd
Start date/time: 7/25/2017	Pipe width: 18	Pipe height: 18	Pipe type: CMP
Direction: UPSTREAM	Surveyed footage: 97.4	Operator: Brandon Markson	Comments:

Notes: 585-6 to 585-5

- 18-in. CMP
- 97 LF
- Sta. 0+00 to 0+30 water depth 4" to 2". Sta. 0+30 to 0+97 water depth 2" to 1".
- Some corrosion with minor metal loss at 5:00 & 7:00 along length of the pipe.
- Flow: 1" to 4"
- Grade score of: 2

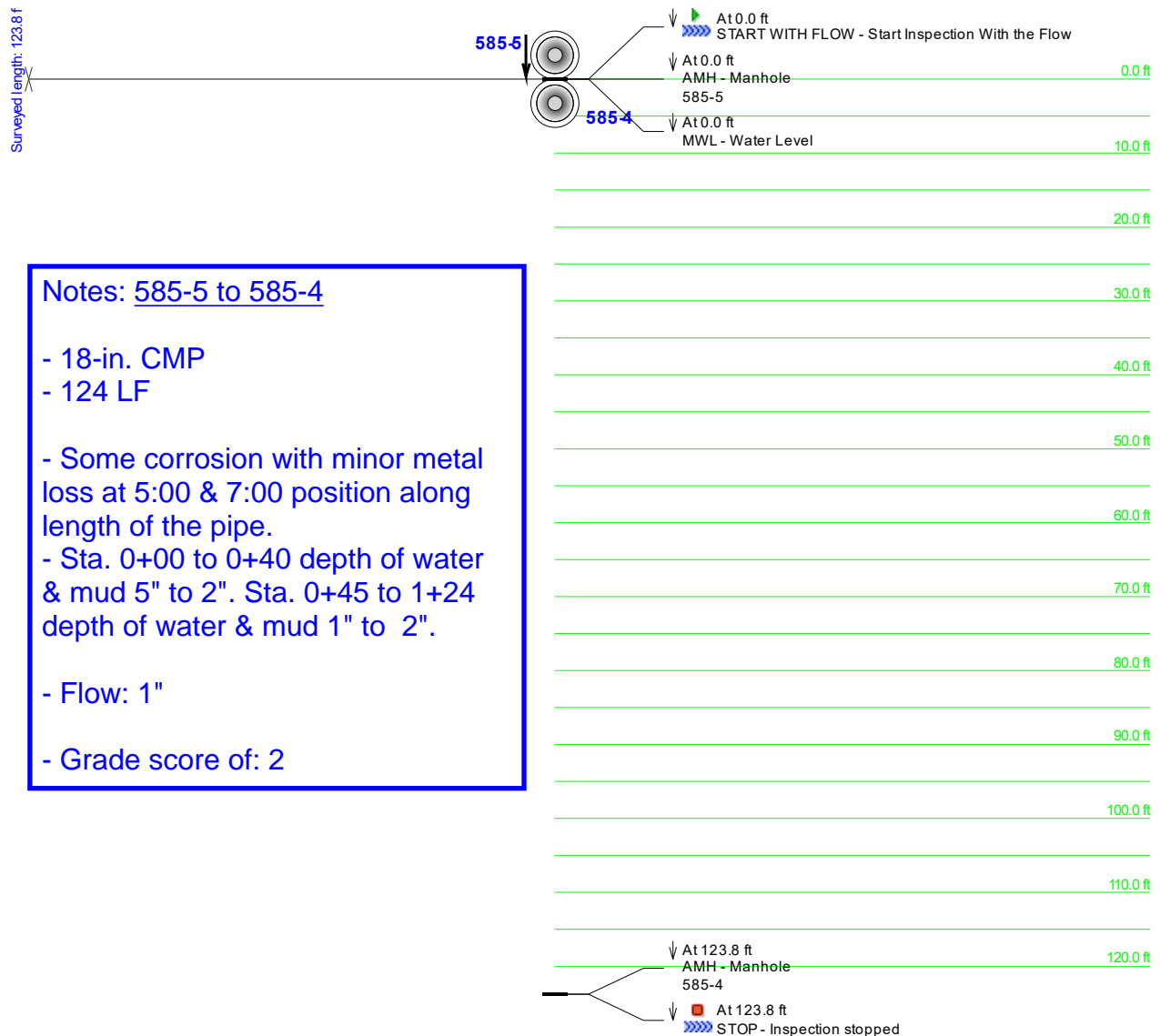


Surveyed length: 97.4 ft



Main Inspection with Pipe-Run Graph

Project Name: Dimond DOT 2017	Mainline ID: 585-5 to 585-4	City: Anchorage	Address: Dimond Blvd
Start date/time: 7/25/2017	Pipe width: 18	Pipe type: CMP	Surface condition:
Direction: Downstream	Surveyed footage: 123.8	Operator: Brandon Markson	Weather:



Notes: 585-5 to 585-4

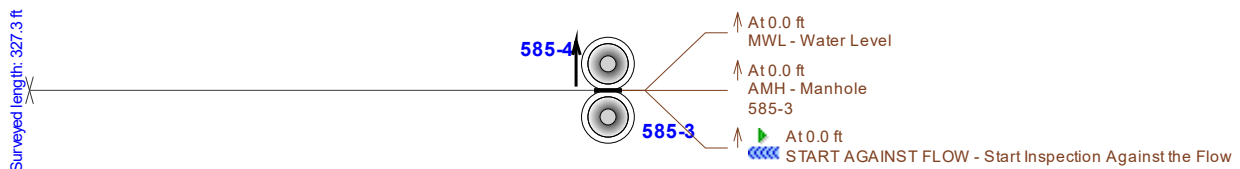
- 18-in. CMP
- 124 LF
- Some corrosion with minor metal loss at 5:00 & 7:00 position along length of the pipe.
- Sta. 0+00 to 0+40 depth of water & mud 5" to 2". Sta. 0+45 to 1+24 depth of water & mud 1" to 2".
- Flow: 1"
- Grade score of: 2

Main Inspection with Pipe-Run Graph

Project Name: Dimond DOT 2017	Mainline ID: 585-4 to 585-3	City: Anchorage	Address: Dimond Blvd
Start date/time: 7/21/2017	Pipe width: 30	Pipe height: 30	Pipe type: CMP
Direction: UPSTREAM	Surveyed footage: 327.3	Operator: Brandon Markson	Comments:

Notes: 585-4 to 585-3

- 30-in. CMP
- 328 LF
- Corrosion w/some material loss 5:00 position, for the length of the pipe. This corrosion is w/in 6" of 2 thaw cable.
- Deformation 12:00 position Sta.1+10 & 3+08.
- Slight joint off set Sta.3+18.
- Flow: 1"
- Grade score of: 2

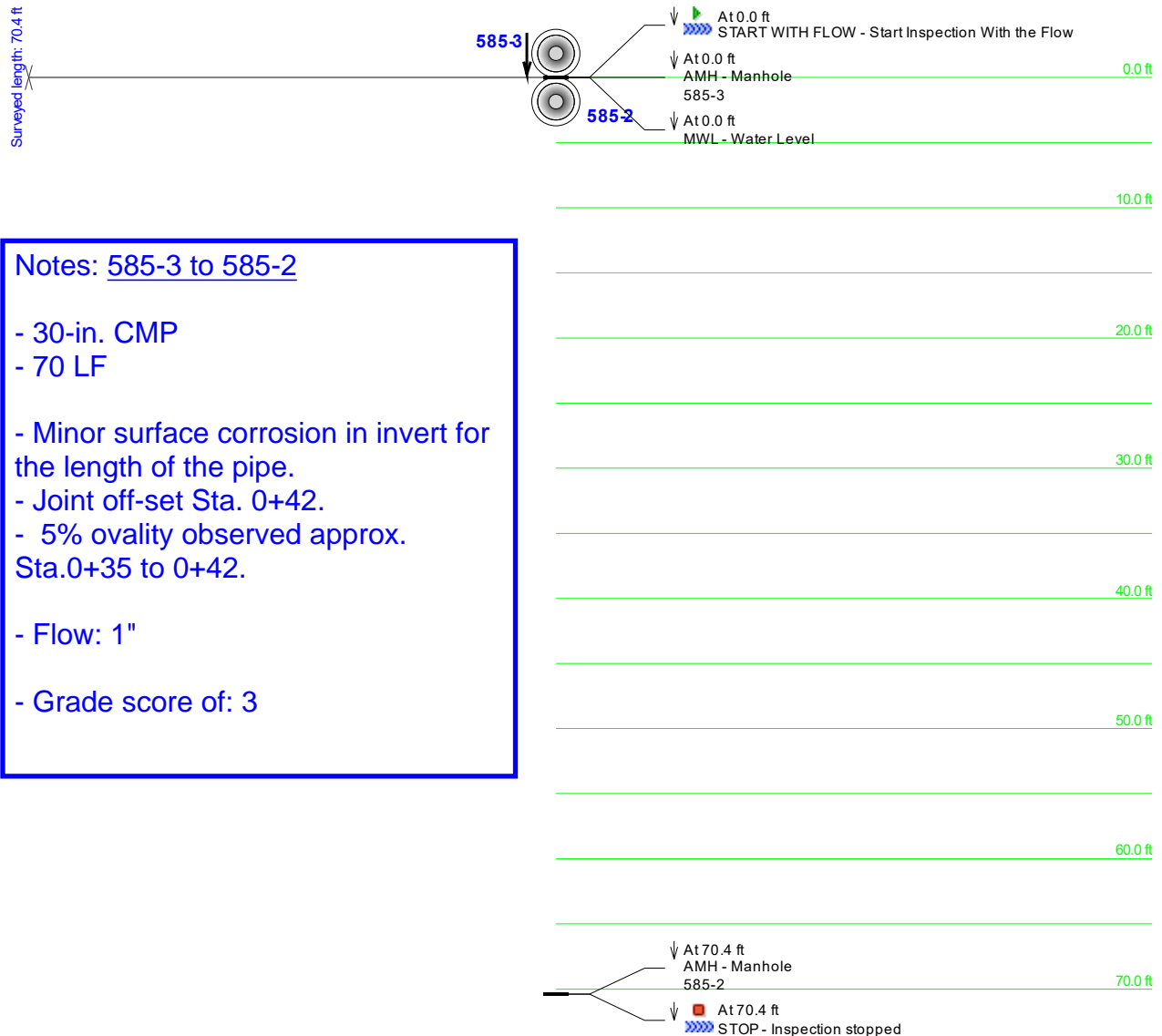


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Main Inspection with Pipe-Run Graph

Project Name: Dimond DOT 2017	Mainline ID: 585-3 - 585-2	City: Anchorage	Address: Dimond Blvd
Start date/time: 7/21/2017	Pipe width: 30	Pipe height: 30	Pipe type: CMP
Direction: Downstream	Surveyed footage: 70.4	Operator: Brandon Markson	Comments:

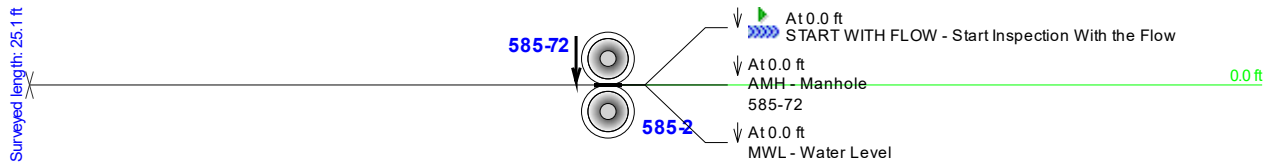


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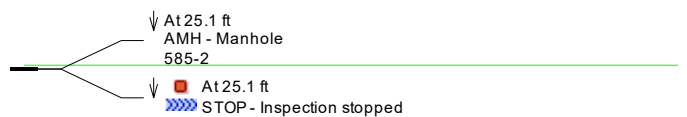
Main Inspection with Pipe-Run Graph

Project Name: Dimond DOT 2017	Mainline ID: 585-72 - 585-2	City: Anchorage	Address: Dimond Blvd
Start date/time: 7/21/2017	Pipe width: 18	Pipe height: 18	Pipe type: CMP
Direction: Downstream	Surveyed footage: 25.1	Operator: Brandon Markson	Comments:



Notes: 585-72 to 585-2

- 18-in. CMP
- 25 LF
- Surface corrosion in invert for the length of the pipe.
- Flow: Minimal
- Grade score of: 1



Main Inspection with Pipe-Run Graph

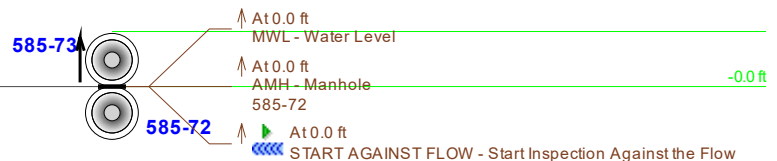
Project Name: Dimond DOT 2017	Mainline ID: 585-73 to 585-72	City: Anchorage	Address: Dimond Blvd
Start date/time: 7/21/2017	Pipe width: 	Pipe height: 18	Pipe type: CMP
Direction: UPSTREAM	Surveyed footage: 91.9	Operator: Brandon Markson	Comments:



Notes: 585-73 to 585-72

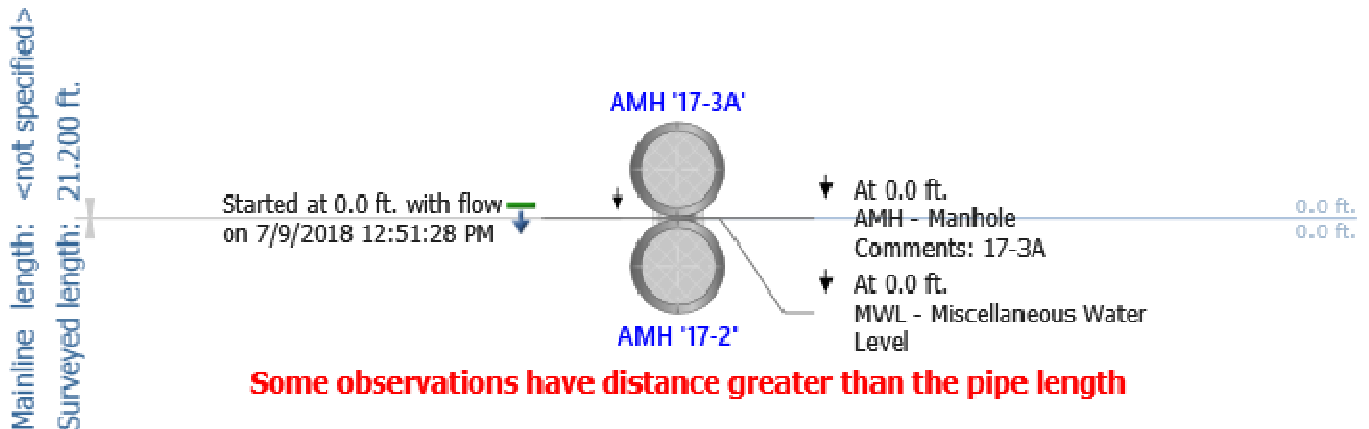
- 18-in. CMP
- 92 LF
- Minor surface corrosion in invert for the length of the pipe.
- Flow: Minimal
- Grade score of: 1

Surveyed length: 91.9 ft



Main Inspections Pipe Run

Project name:	Mainline ID:	City:	Street:
Dimond Blvd. CCTV map 2018	17-3 to 17-2	Anchorage	Dimond
Start date/time:	Direction:	Weather:	Location code:
7/9/2018 12:51 PM	D		
Shape:	Material:	Height:	Width:
C	CMP	24 in.	

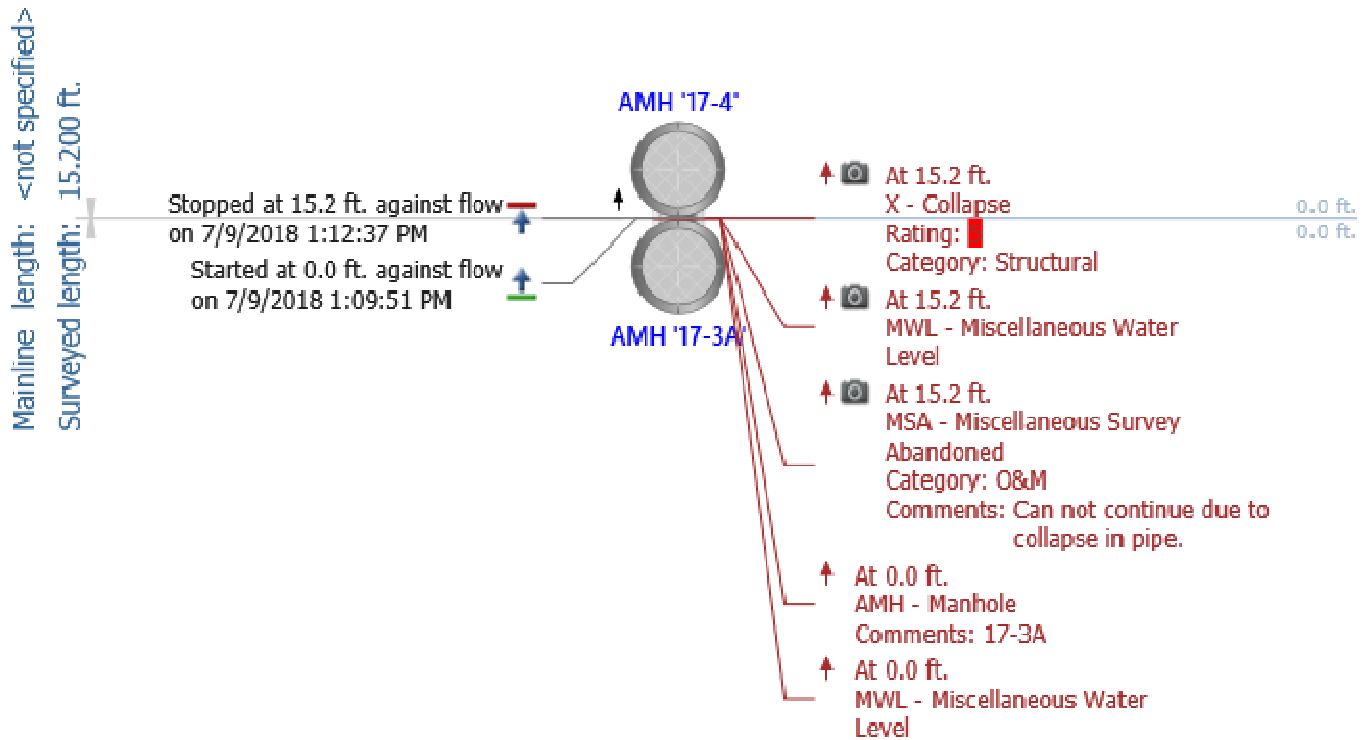


Notes: 17-3 to 17-2

- 24-inch CMP
- 21 LF
- Varying debris
- Possible surface corrosion in invert, unable to see invert completely due to debris
- CMP outfall structure at end of inspection
- No major defects observed
- Flow: 1"
- Grade score of: 1

Main Inspections Pipe Run

Project name:	Mainline ID:	City:	Street:
Dimond Blvd. CCTV map 2018	17-4 to 17-3	Anchorage	Dimond
Start date/time:	Direction:	Weather:	Location code:
7/9/2018 1:09 PM	U		
Shape:	Material:	Height:	Width:
C	CMP	18 in.	

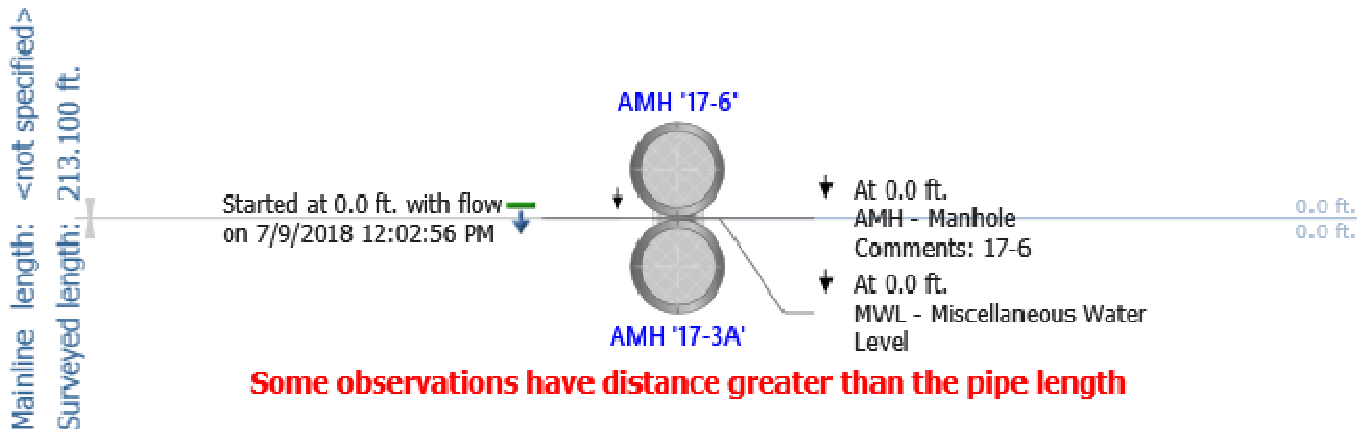


Notes: 17-4 to 17-3

- 18-inch CMP
- 98 LF
- 0-1" debris,
- Pipe crush at 15 LF, 15" in 12" position, camera unable to pass
- Flow: None
- Grade score of: 4

Main Inspections Pipe Run

Project name:	Mainline ID:	City:	Street:
Dimond Blvd. CCTV map 2018	17-6 to 17-3	Anchorage	Dimond
Start date/time:	Direction:	Weather:	Location code:
7/9/2018 12:02 PM	D		
Shape:	Material:	Height:	Width:
C	CMP	24 in.	

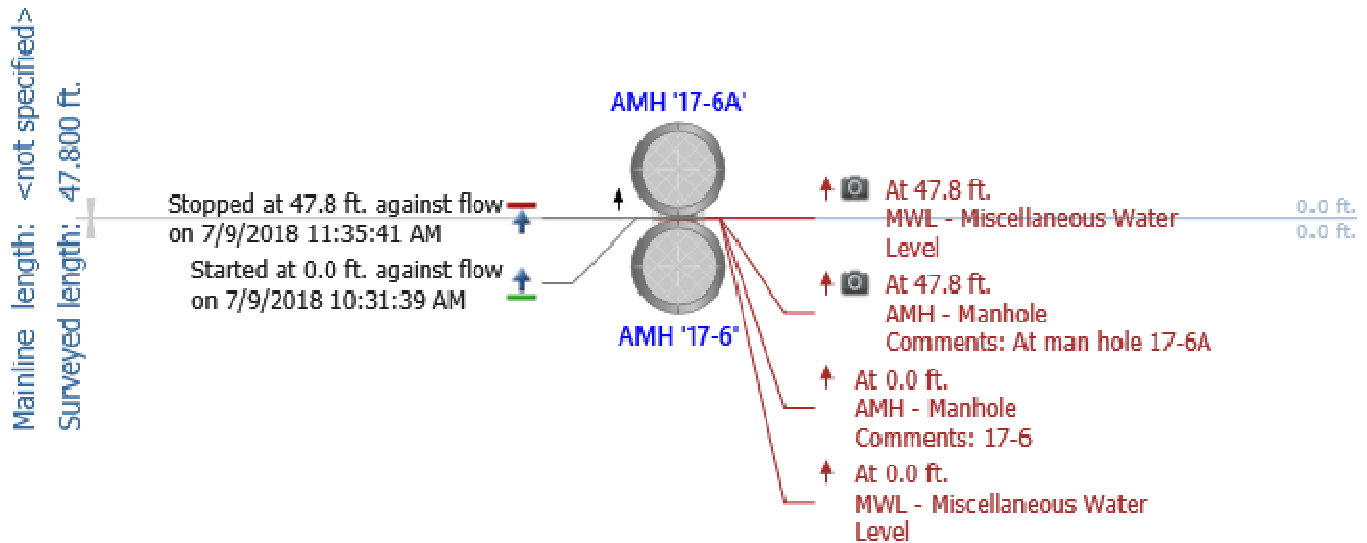


Notes: 17-6 to 17-3

- 24-inch CMP
- 213 LF
- Possible surface discoloration/corrosion in invert, degree of severity unknown
- 1" deformation 1:00 position, 27 LF
- 1" deformation 12:00 position, 41 LF
- 1" deformation 3:00 position, 163 LF
- 4-6" deformation 11:00 position, 204 LF
- Flow: 1"
- Grade score of: **2**

Main Inspections Pipe Run

Project name:	Mainline ID:	City:	Street:
Dimond Blvd. CCTV map 2018	17-6A to 17-6	Anchorage	Dimond
Start date/time:	Direction:	Weather:	Location code:
7/9/2018 10:31 AM	U		
Shape:	Material:	Height:	Width:
C	CMP	24 in.	

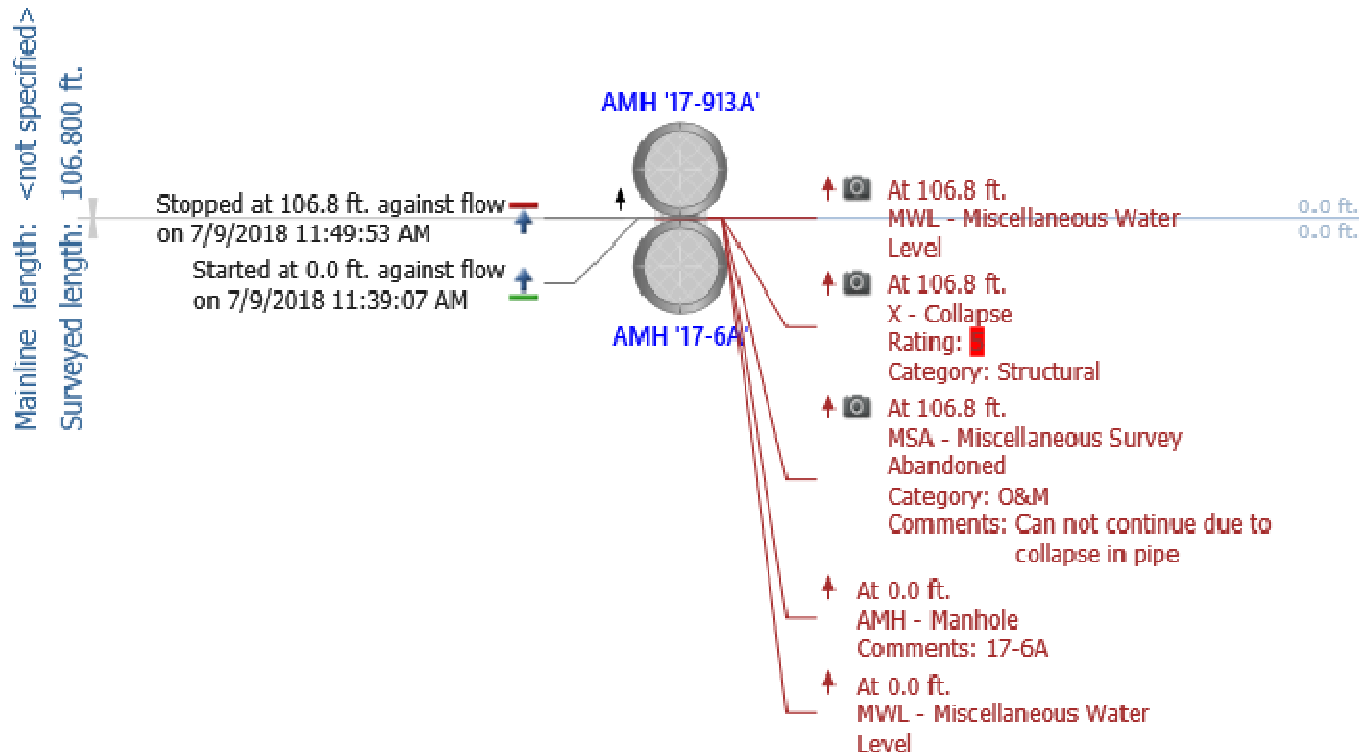


Notes: 17-6A to 17-6

- 24-inch CMP
- 48 LF
- Possible minor surface corrosion in invert
- No debris buildup or major defects
- Flow: 1"
- Grade score of: 1

Main Inspections Pipe Run

Project name:	Mainline ID:	City:	Street:
Dimond Blvd. CCTV map 2018	17-8 to 17-6A	Anchorage	Dimond
Start date/time:	Direction:	Weather:	Location code:
7/9/2018 11:39 AM	U		
Shape:	Material:	Height:	Width:
C	CMP	24 in.	

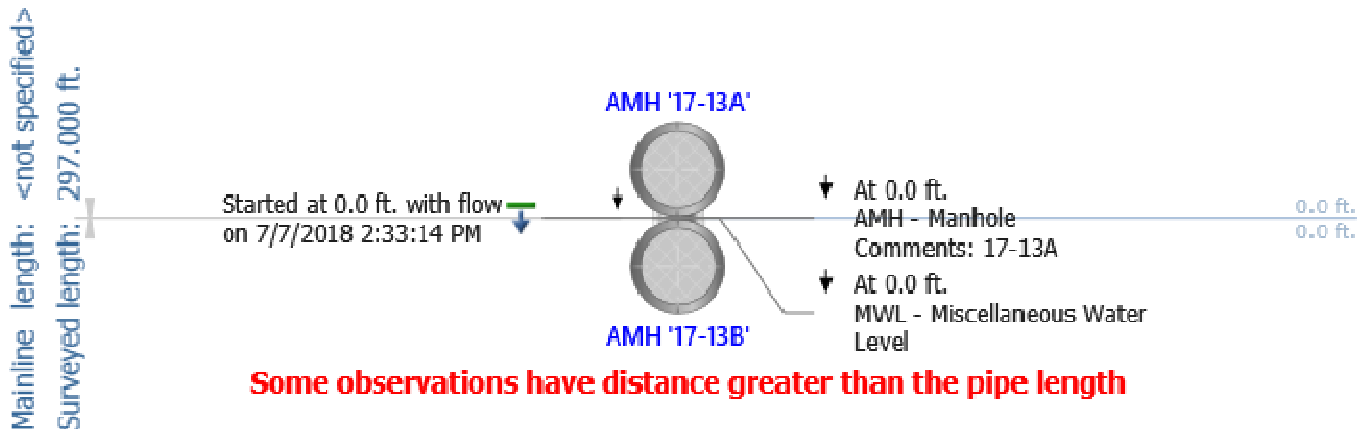


Notes: 17-8 to 17-6A

- 24-inch CMP
- 267 LF
- Possible minor surface corrosion in invert
- Potential belly at approximate 35 LF
- Mineralization at joint at 66 LF, 86 LF, 106 LF
- 12" deformation in 12:00 position at 105 LF continues for approximately 5-10', camera unable to pass,
- Flow: 1"
- Grade score of: 4

Main Inspections Pipe Run

Project name:	Mainline ID:	City:	Street:
Dimond Blvd. CCTV map 2018	17-13A to 17-8	Anchorage	Dimond
Start date/time:	Direction:	Weather:	Location code:
7/7/2018 2:33 PM	D		
Shape:	Material:	Height:	Width:
C	CMP	24 in.	

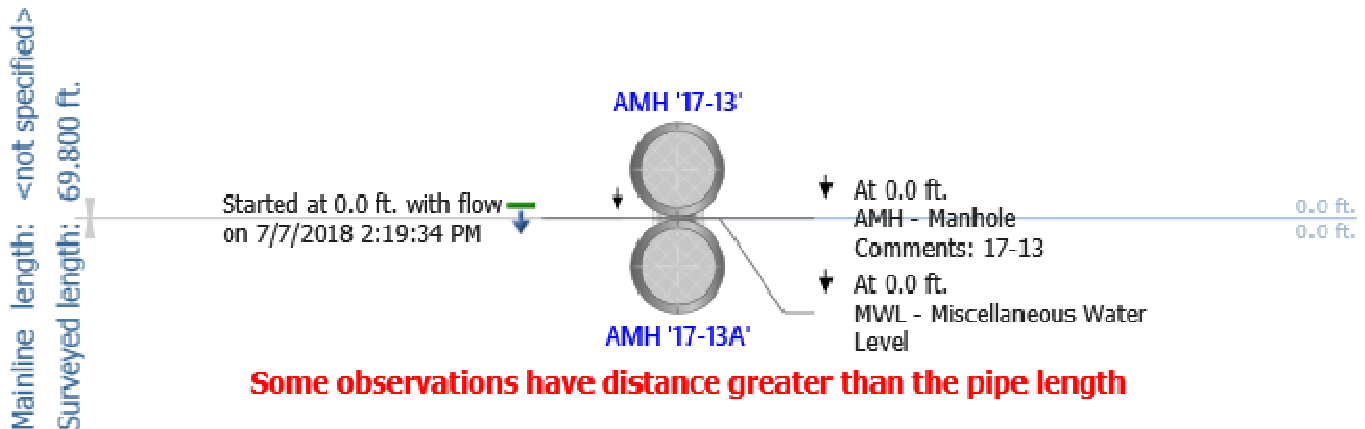


Notes: 17-13A to 17-8

- 24-inch CMP
- 297 LF
- Discoloration and evidence of corrosion in invert
- 1-2" deformation in 1:00 position, 14 LF
- Evidence of infiltration with mineralization, 9:00 position 25 LF
- Corrosion at joint at 190 LF
- No major structural defects observed
- Flow: 1"
- Grade score of: **2**

Main Inspections Pipe Run

Project name:	Mainline ID:	City:	Street:
Dimond Blvd. CCTV map 2018	17-13 - 17-13A	Anchorage	Dimond
Start date/time:	Direction:	Weather:	Location code:
7/7/2018 2:19 PM	D		
Shape:	Material:	Height:	Width:
C	CMP	24 in.	

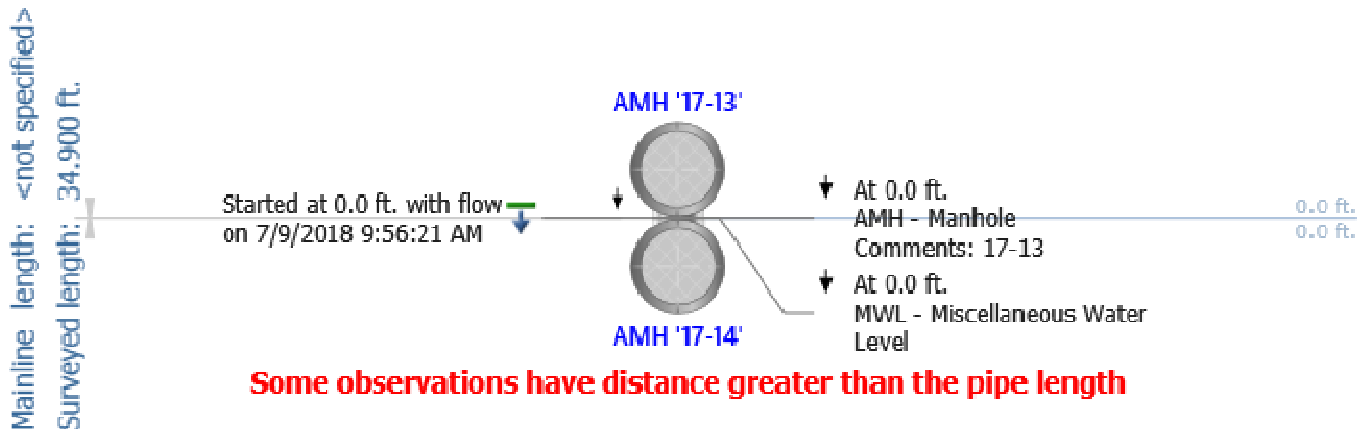


Notes: 17-13 to 17-13A

- 24-inch CMP
- 70 LF
- Discoloration in bottom of pipe
- Minimal debris
- 2-3" deformation of pipe end protruding in downstream manhole 10:00 position
- Evidence of minor surface corrosion in invert
- No major defects observed
- Flow: Minimal
- Grade score of: 1

Main Inspections Pipe Run

Project name:	Mainline ID:	City:	Street:
Dimond Blvd. CCTV map 2018	17-14 to 17-13	Anchorage	Dimond
Start date/time:	Direction:	Weather:	Location code:
7/9/2018 9:56 AM	U		
Shape:	Material:	Height:	Width:
C	CMP	12 in.	

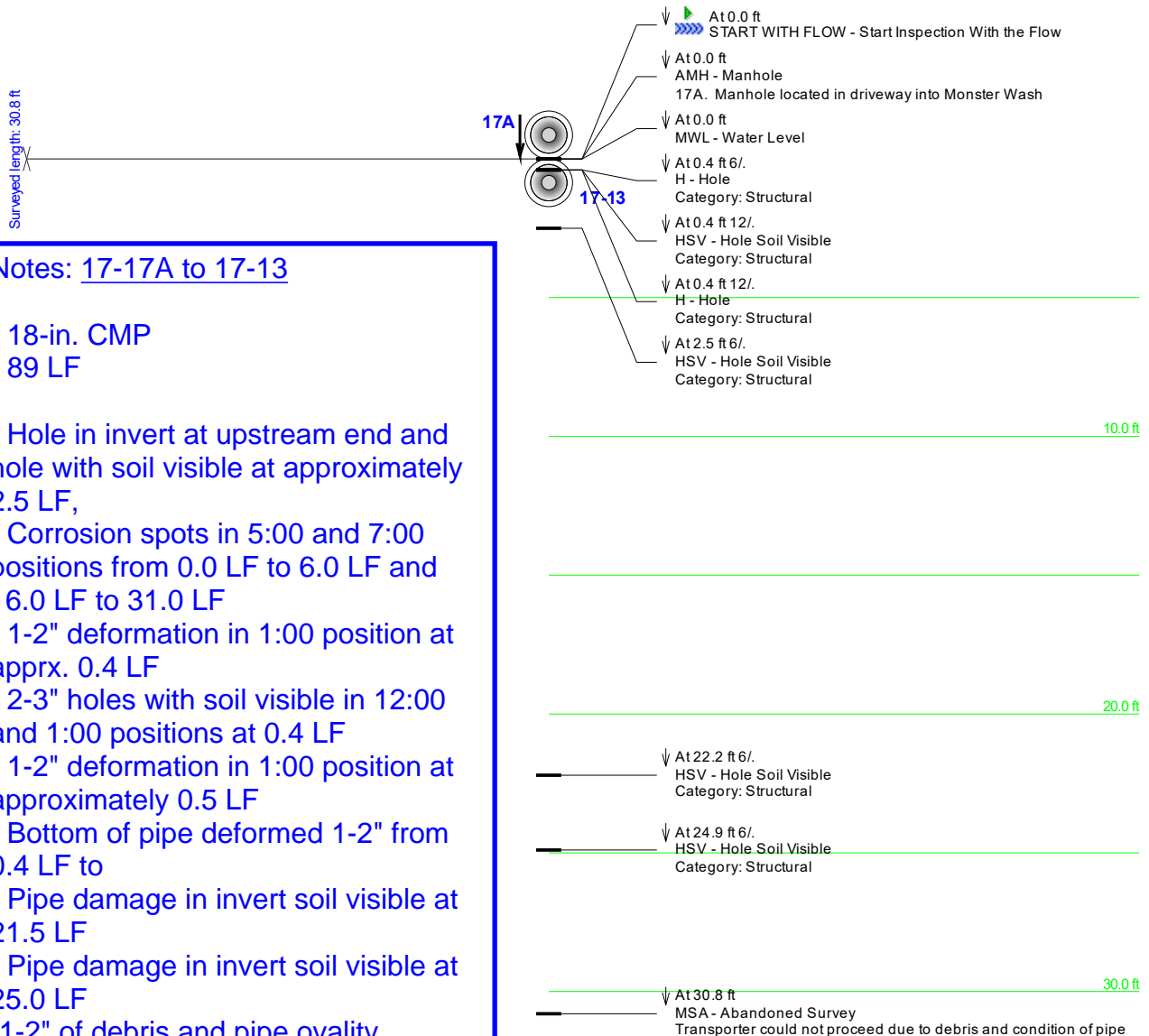


Notes: 17-14 to 17-13

- 12-inch CMP
- 69 LF
- 0-1" of debris in pipe, increases to half full at conclusion of survey
- Discoloration in bottom of pipe, evidence of corrosion in invert, mostly obscured by debris
- Minor corrosion at joint at 26 LF
- Possible belly in pipe at 35 LF
- Flow: 0-1"
- Grade score of: **2**

Main Inspection with Pipe-Run Graph

Project Name: Dimond DOT 2017		Mainline ID: 17A - 17-13		City: Anchorage		Address: Dimond Blvd	
Start date/time: 8/4/2017		Pipe width: 	Pipe height: 18	Pipe type: CMP	Surface condition: 		Weather:
Direction: Downstream		Surveyed footage: 30.8		Operator: Brandon Markson		Comments 	



Main Inspection with Pipe-Run Graph

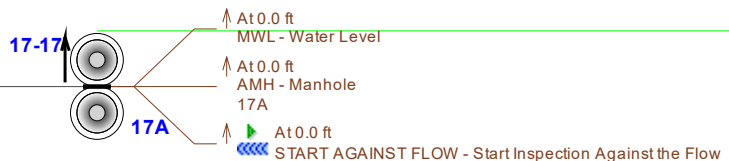
Project Name: Dimond DOT 2017	Mainline ID: 17-17 to 17-17A	City: Anchorage	Address: Dimond Blvd
Start date/time: 8/4/2017	Pipe width: 18	Pipe height: 18	Pipe type: CMP
Direction: UPSTREAM	Surveyed footage: 90.6	Operator: Brandon Markson	Comments:

Notes: 17-17 to 17-17A

- 18-in. CMP
- 91 LF
- 1-2" of debris in pipe
- Visible corrosion in 5:00 position from 0.5 LF to 16.0 LF
- Possible belly in pipe at 21 LF
- Surface corrosion visible in 5:00 and 7:00 positions at 21 LF to 31 LF
- Surface corrosion visible in invert when not covered in debris
- Surface corrosion in 7:00 position at 57 LF to 68 LF
- 1-2" deformation in 1:00 position at 86 LF
- Non-standard upstream end treatment, cut to fit beneath slab in upstream manhole
- Flow: Minimal
- Grade score of: 3

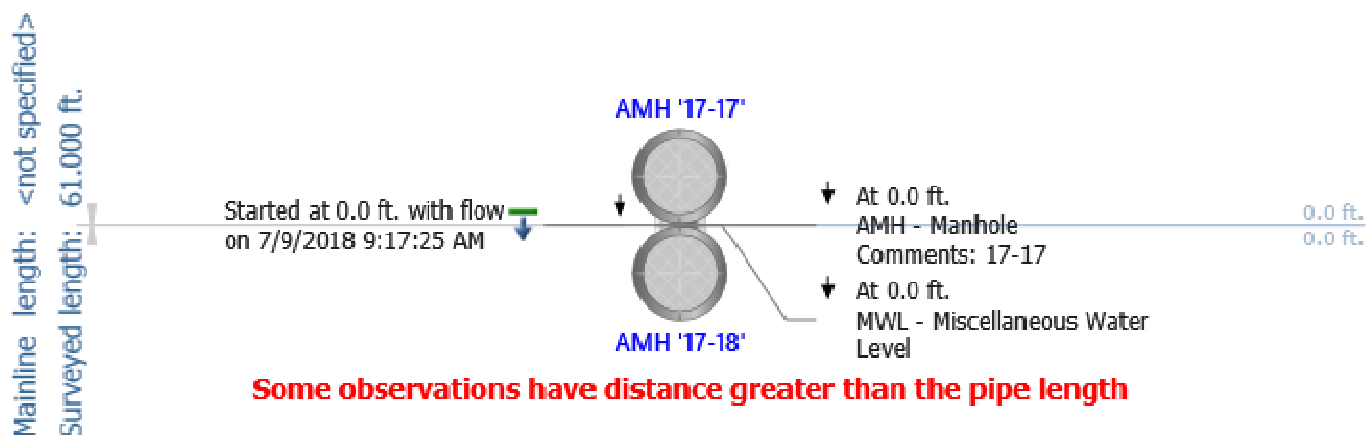


Surveyed length: 90.6 ft



Main Inspections Pipe Run

Project name: Dimond Blvd. CCTV map 2018	Mainline ID: 17-18 to 17-17	City: Anchorage	Street: Dimond
Start date/time: 7/9/2018 9:17 AM	Direction: U	Weather:	Location code:
Shape: C	Material: CMP	Height: 15"	Width:



Notes: 17-18 to 17-17

- 15-inch CMP
- 61 LF
- 0-1" debris in pipe
- 10% cross sectional area loss at downstream end of pipe
- Evidence of corrosion in invert
- 1" deformation in 11:00 position, end of inspection at upstream end of pipe
- Flow: Minimal
- Grade score of: **2**

Main Inspection with Pipe-Run Graph

Project Name: Dimond DOT 2017	Mainline ID: 1357-21 - 1367-20	City: Anchorage	Address: Dimond Blvd
Start date/time: 8/4/2017	Pipe width: 	Pipe height: 12	Pipe type: CMP
Direction: Downstream	Surveyed footage: 100.9	Operator: Brandon Markson	Comments:

Surveyed length: 100.9 ft

1367-21



Notes: 1367-21 to 1367-20

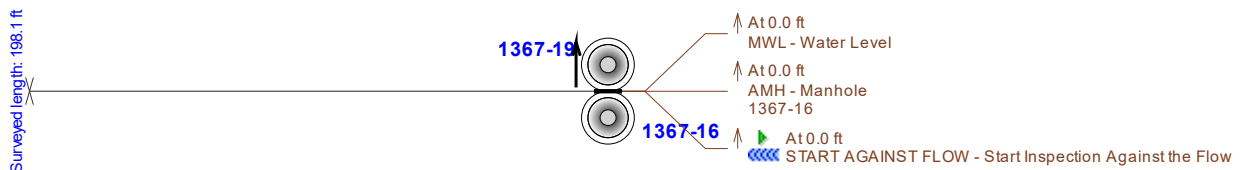
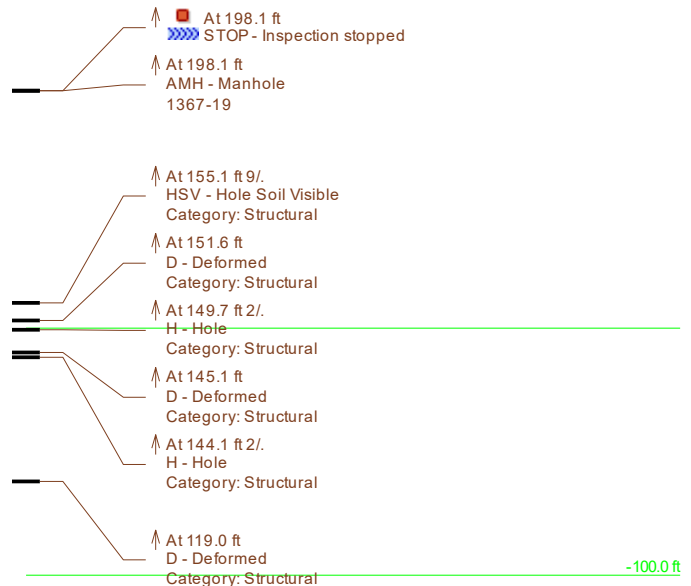
- 12-in. CMP
- 101 LF
- Various debris depths 0-2" throughout pipe
- Surface corrosion in 3:00 and 9:00 position, visible metal loss 0-10 LF
- Surface discoloration in 9:00 position 10-25 LF
- Potential sag made apparent by debris buildup at 56 LF
- Offset joint appx. 1 in. at 64 LF
- Potential sag made apparent by debris buildup at 76 LF
- Physically inspected invert, metal appeared sound
- Flow: None
- Grade score of: 3

Main Inspection with Pipe-Run Graph

Project Name: Dimond DOT 2017	Mainline ID: 1367-19 to 1367-16	City: Anchorage	Address: Dimond Blvd
Start date/time: 8/4/2017	Pipe width: 	Pipe height: 18	Pipe type: CMP
Direction: UPSTREAM	Surveyed footage: 198.1	Operator: Brandon Markson	Comments:

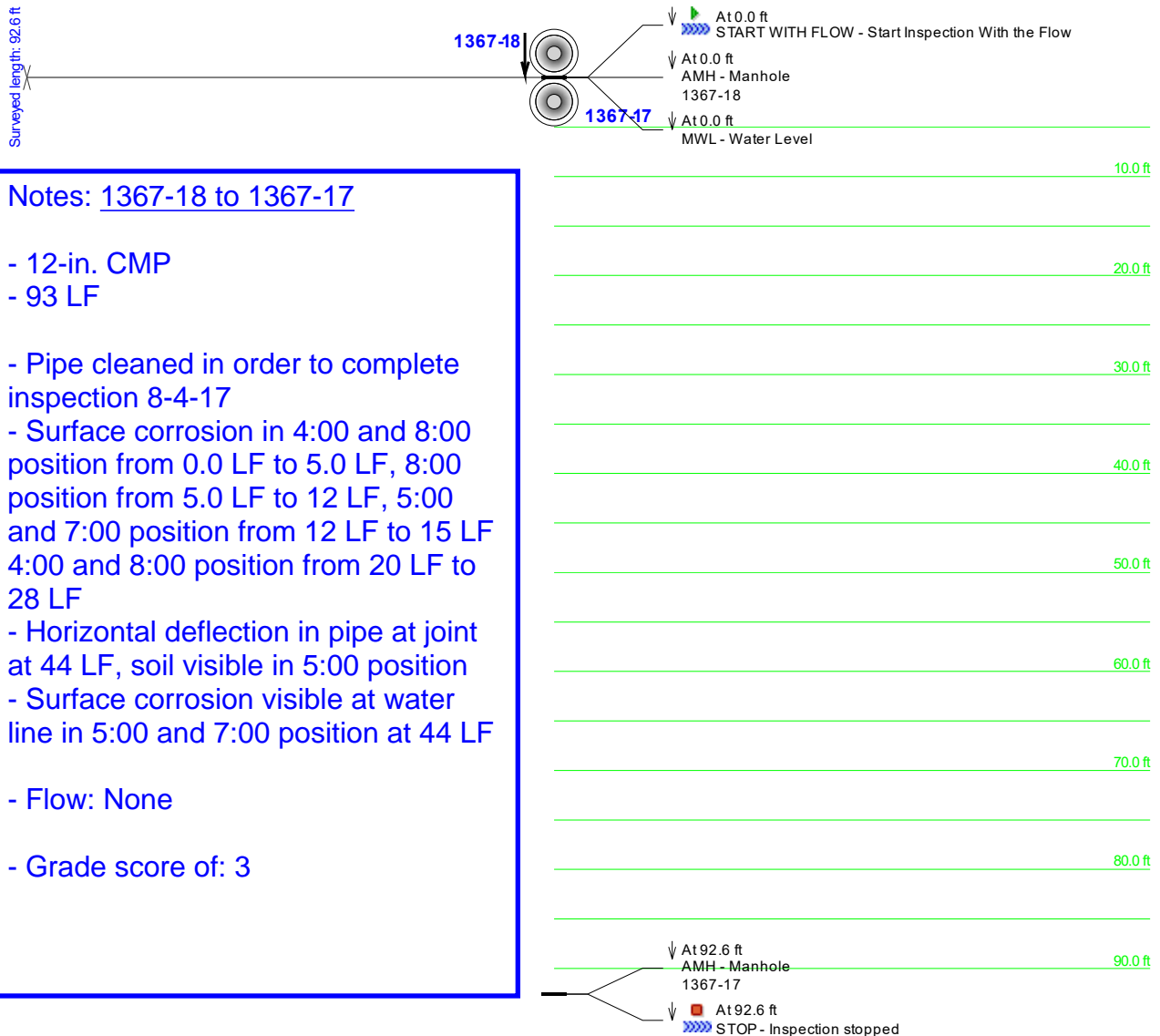
Notes: 1367-19 to 1367-16

- 18-in. CMP
- 198 LF
- 2-3" of debris, pipe cleaned 8-4-17
- Evidence of joint infiltration at 107 LF
- 1-2" deformation in 1:00 to 2:00 position
- Damage/hole from installation repair, screws showing, 2:00 position at 144 LF
- 0-1" deformation 10:00 position at 145 LF
- 6" Hole from installation repair, screws showing in 2:00 position at 149 LF
- 1-2" deformation 10:00 position at 152 LF
- 1-2" deformation 9:00 position at 155 LF
- Evidence of joint infiltration at 175 LF and 195 LF
- Visible surface discoloration in 5:00 position 195 LF
- Flow: None
- Grade score of: 3



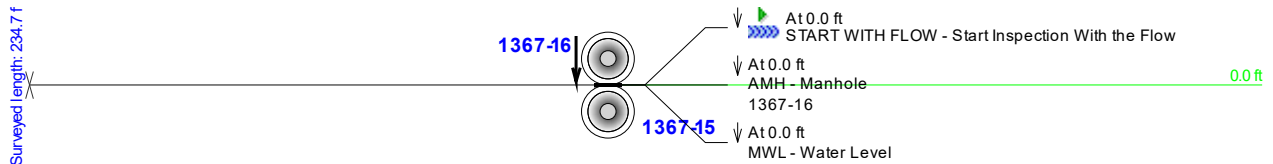
Main Inspection with Pipe-Run Graph

Project Name: Dimond DOT 2017	Mainline ID: 1367-18 - 1367-17	City: Anchorage	Address: Dimond Blvd
Start date/time: 8/4/2017	Pipe width: 12	Pipe type: CMP	Surface condition:
Direction: Downstream	Surveyed footage: 92.6	Operator: Brandon Markson	Weather:



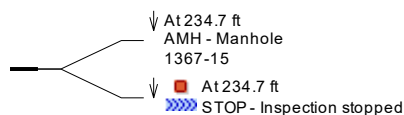
Main Inspection with Pipe-Run Graph

Project Name: Dimond DOT 2017	Mainline ID: 1367-16 - 1367-15	City: Anchorage	Address: Dimond Blvd
Start date/time: 8/4/2017	Pipe width: 18	Pipe height: 18	Pipe type: CMP
Direction: Downstream	Surveyed footage: 234.7	Operator: Brandon Markson	Comments:



Notes: 1367-16 to 1367-15

- 18-in. CMP
- 235 LF
- 1-2" debris buildup in invert position scattered throughout pipe
- Surface discoloration visible in 5:00 and 7:00 position at 25 LF, predicting similar condition at waterline (verified at 45 LF throughout pipe)
- 1" deformation in 11:00 position at 33 LF
- Pipe deformation in 9:00 position at 78 LF
- Root infiltration in 12:00 position at 150 LF
- Debris buildup at 160 LF preventing camera from moving, pipe cleaned
- Evidence of joint infiltration 205 LF
- Visible surface corrosion at water line, 5:00 and 7:00 position and evidence of infiltration at joint 230 LF
- Flow: Minimal
- Grade score of: 3

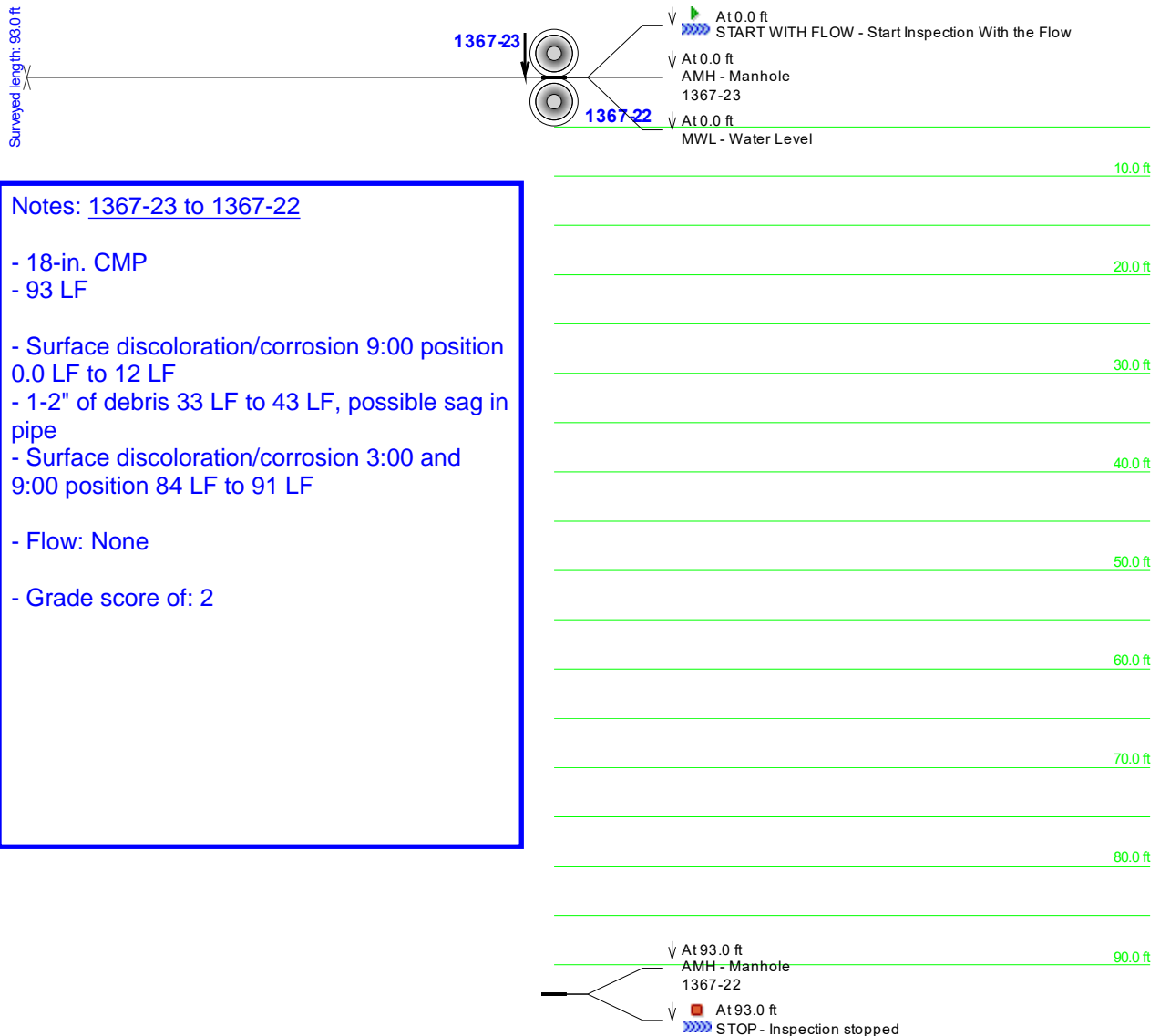


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 Orlando, FL 32805
 Phone: 407-849-0190
 Fax: 407-425-1569



Main Inspection with Pipe-Run Graph

Project Name: Dimond DOT 2017	Mainline ID: 1367-23 - 1367-22	City: Anchorage	Address: Dimond Blvd
Start date/time: 8/4/2017	Pipe width: 	Pipe height: 18	Pipe type: CMP
Direction: Downstream	Surveyed footage: 93.0	Operator: Brandon Markson	Comments:



Main Inspection with Pipe-Run Graph

Project Name: Dimond DOT 2017	Mainline ID: 1367-25 - 1367-24	City: Anchorage	Address: Dimond Blvd
Start date/time: 8/4/2017	Pipe width: 18	Pipe height: 18	Pipe type: CMP
Direction: Downstream	Surveyed footage: 99.6	Operator: Brandon Markson	Comments:

Surveyed length: 99.6 ft

1367-25



At 0.0 ft
 START WITH FLOW - Start Inspection With the Flow
 At 0.0 ft
 AMH - Manhole
 1367-25
 At 0.0 ft
 MWL - Water Level

Notes: 1367-25 to 1367-24

- 18-in. CMP
- 100 LF
- Discoloration/corrosion 4:00-5:00 and 7:00-8:00 position 0.0 LF to 21 LF
- Minimal debris 31 LF to 43 LF, 75 LF to 85 LF
- Flow: None
- Grade score of: 1



At 99.6 ft
 AMH - Manhole
 1367-22
 At 99.6 ft
 STOP - Inspection stopped

Main Inspection with Pipe-Run Graph

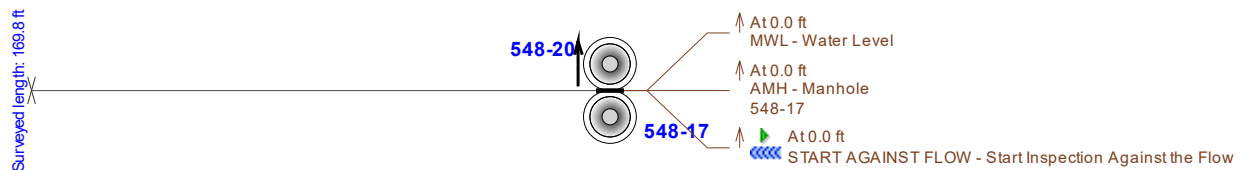
Project Name: Dimond DOT 2017	Mainline ID: 548-20 to 548-17	City: Anchorage	Address: Dimond Blvd
Start date/time: 7/25/2017	Pipe width: 18	Pipe height: 18	Pipe type: CMP
Direction: UPSTREAM	Surveyed footage: 169.8	Operator: Brandon Markson	Comments:

Notes: 548-20 to 548-17

- 18-in. CMP
- 170 LF
- Some corrosion w/pitting & minor metal loss in invert along length of the pipe.
- Flow: Minimal
- Grade score of: 2

↑ At 169.8 ft
 STOP - Inspection stopped
 ↑ At 169.8 ft
 AMH - Manhole
 548-20

-100.0 ft

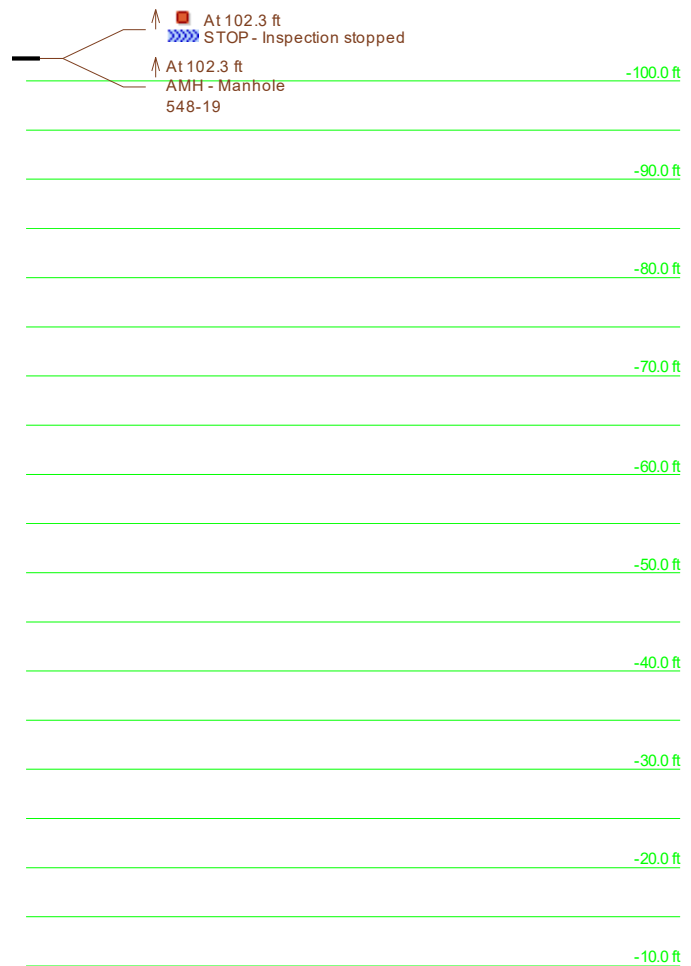


Main Inspection with Pipe-Run Graph

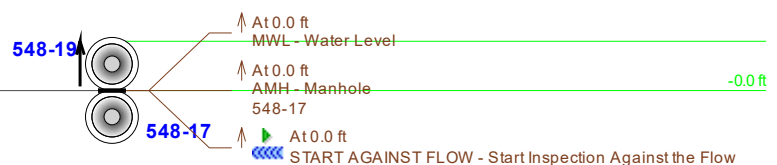
Project Name: Dimond DOT 2017	Mainline ID: 548-19 to 548-17	City: Anchorage	Address: Dimond Blvd
Start date/time: 7/25/2017	Pipe width: 	Pipe height: 18	Pipe type: CMP
Direction: UPSTREAM	Surveyed footage: 102.3	Operator: Brandon Markson	Comments:

Notes: 548-19 to 548-17

- 18-in. CMP
- 102 LF
- Some corrosion w/pitting & minor metal loss in invert along length of the pipe.
- Flow: Minimal
- Grade score of: 2



Surveyed length: 102.3 ft

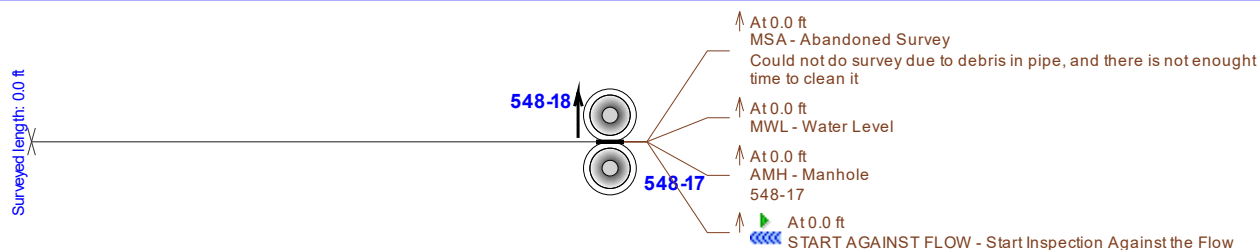


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Orlando, FL 32805
Phone: 407-849-0190
Fax: 407-425-1569



Main Inspection with Pipe-Run Graph

Project Name:	Mainline ID:	City:	Address:		
Dimond DOT 2017	548-18 to 548-17	Anchorage	Dimond Blvd		
Start date/time:	Pipe width:	Pipe height:	Pipe type:	Surface condition:	Weather:
7/25/2017		18	CMP		
Direction:	Surveyed footage:	Operator:	Comments:		
UPSTREAM	0.0	Brandon Markson			



Notes: 548-18 to 548-17

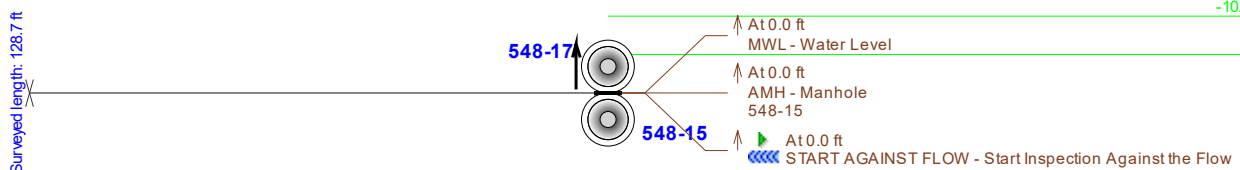
- 18-in. CMP
- 0 LF, GIS 42 LF
- Debris in pipe, camera could not move.
- Used zoom lens on camera for inspection.
- Invert covered w/debris
- Some minor corrosion on pipe sides.
- Flow: Minimal
- Grade score of: 2

Main Inspection with Pipe-Run Graph

Project Name: Dimond DOT 2017	Mainline ID: 548-17 to 548-15	City: Anchorage	Address: Dimond Blvd
Start date/time: 7/31/2017	Pipe width: 	Pipe height: 18	Pipe type: CMP
Direction: UPSTREAM	Surveyed footage: 128.7	Operator: Brandon Markson	Comments:

Notes: 548-17 to 548-15

- 18-in. CMP
- 129 LF
- Pipe cleaned before inspection.
- Sta. 0+00 to 0+40 depth of water & mud 9" to 2". Sta. 0+40 to 1+29 depth of water 1" to 2".
- Some corrosion w/pitting in invert along length of the pipe.
- Flow: 1"
- Grade score of: 2



Main Inspection with Pipe-Run Graph

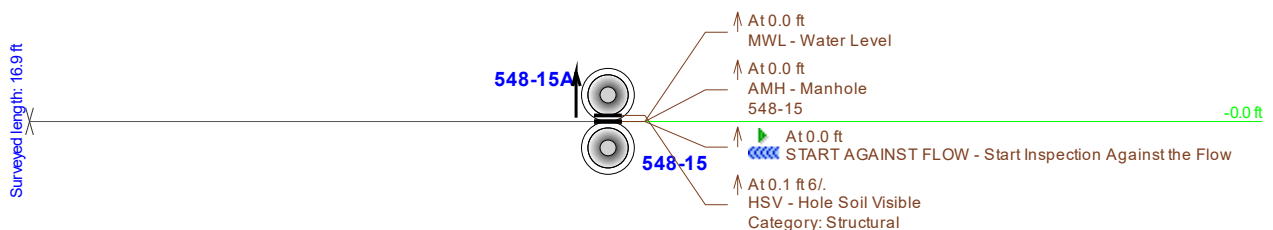
Project Name: Dimond DOT 2017	Mainline ID: 548-15A to 548-15	City: Anchorage	Address: Dimond Blvd
Start date/time: 7/31/2017	Pipe width: 18	Pipe height: 18	Pipe type: CMP
Direction: UPSTREAM	Surveyed footage: 16.9	Operator: Brandon Markson	Comments:

Notes: 548-15A to 548-15

- 18-in. CMP
- 17 LF, GIS 56 LF
- 3-4" Dia. hole Sta. 0+01, 6:00 position.
- Some minor corrosion w/pitting at 5:00 to 7:00 position along length of the pipe.
- Camera stopped at Sta. 0+17, debris.
- Zoomed camera: Two bends to the west upstream, w/some corrosion in the invert.
- Flow: Minimal
- Grade score of: 3

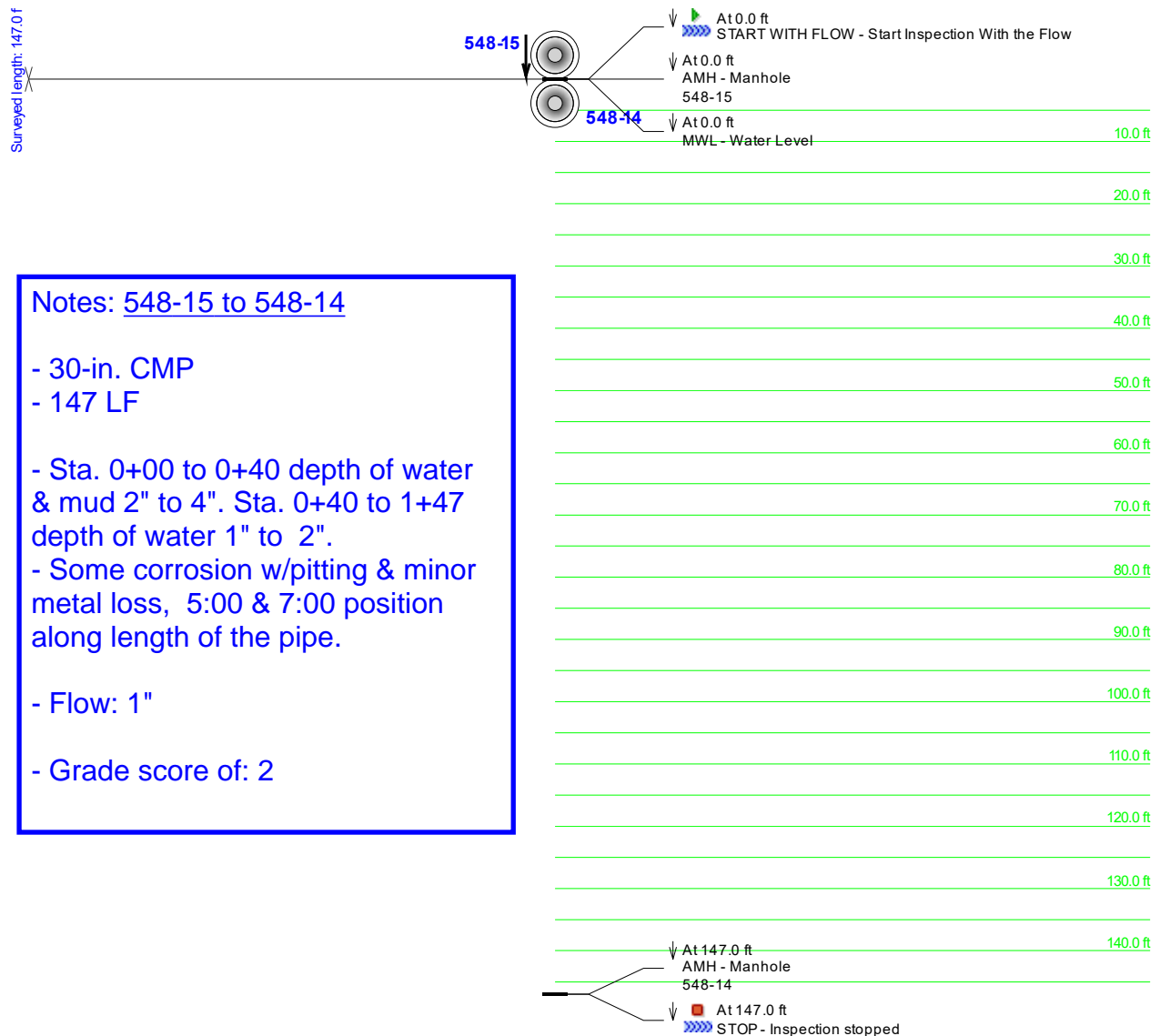
↑ At 16.9 ft
 MSA - Abandoned Survey
 Transporter could not proceed due to debris in pipe

-10.0 ft



Main Inspection with Pipe-Run Graph

Project Name: Dimond DOT 2017	Mainline ID: 548-15 - 548-14	City: Anchorage	Address: Dimond Blvd
Start date/time: 7/31/2017	Pipe width: 30	Pipe height: 30	Pipe type: CMP
Direction: Downstream	Surveyed footage: 147.0	Operator: Brandon Markson	Weather:
Surface condition: 			
Comments 			



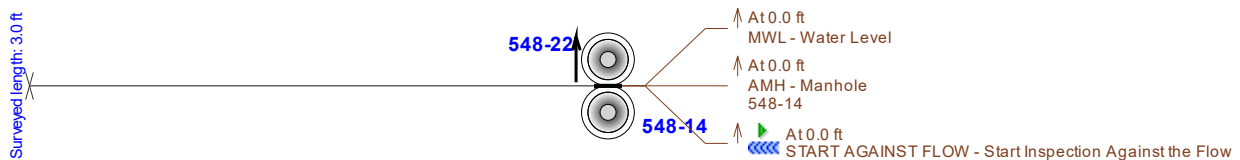
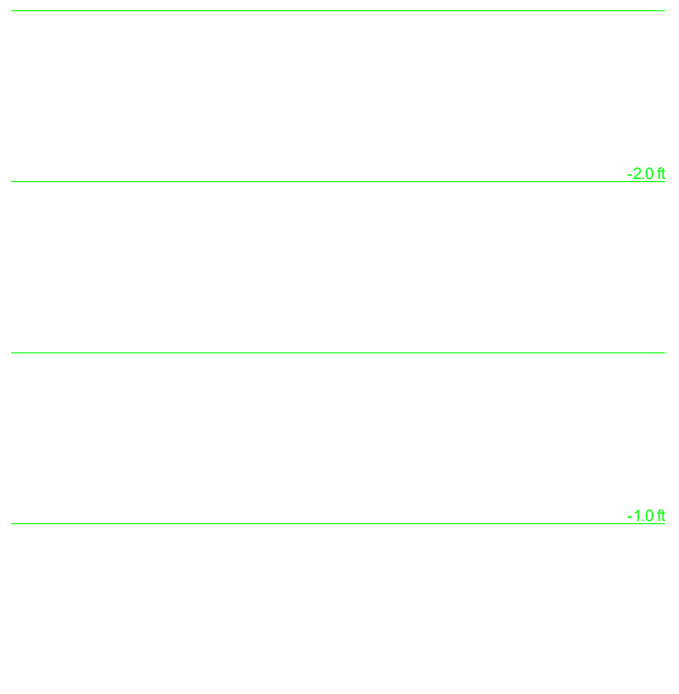
Main Inspection with Pipe-Run Graph

Project Name: Dimond DOT 2017	Mainline ID: 548-22 to 548-14	City: Anchorage	Address: Dimond Blvd
Start date/time: 7/31/2017	Pipe width: 18	Pipe height: 18	Pipe type: CMP
Direction: UPSTREAM	Surveyed footage: 3.0	Operator: Brandon Markson	Comments:

↑ At 3.0 ft
 MSA - Abandoned Survey
 Could not proceed due to a bent lip in the pipe
 -3.0 ft

Notes: 548-22 to 548-14

- 18-in. CMP
- 3 LF, GIS 98 LF
- Minor corrosion at 5:00 to 7:00 position along length of the pipe.
- Camera stopped at Sta. 0+03, metal lip protruding at joint.
- Zoomed camera: some corrosion in the invert.
- Flow: Minimal
- Grade score of: 2



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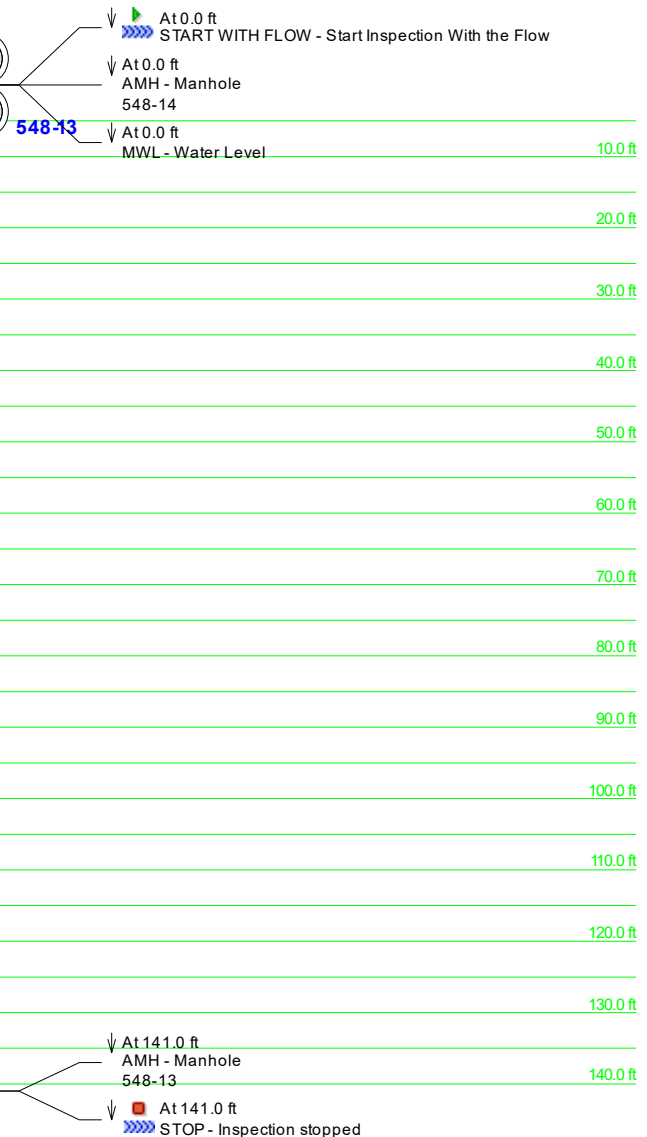


Main Inspection with Pipe-Run Graph

Project Name: Dimond DOT 2017	Mainline ID: 548-14 - 548-13	City: Anchorage	Address: Dimond Blvd
Start date/time: 7/31/2017	Pipe width: 30	Pipe height: 30	Pipe type: CMP
Direction: Downstream	Surveyed footage: 141.0	Operator: Brandon Markson	Comments:

Surveyed length: 141.0 ft

548-14

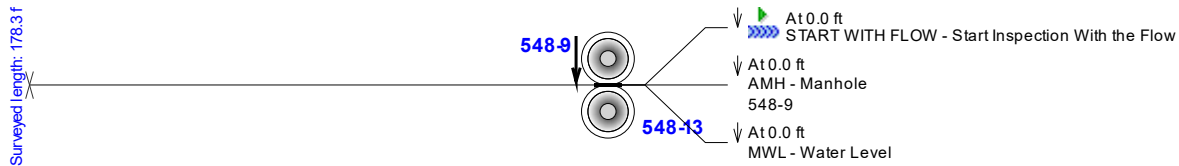


Notes: 548-14 to 548-13

- 30-in. CMP
- 141 LF
- Corrosion w/pitting & metal loss, 5:00 & 7:00 position along length of the pipe.
- Invert may have unseen fractures covered by debris & water.
- Flow: 1"
- Grade score of: 3

Main Inspection with Pipe-Run Graph

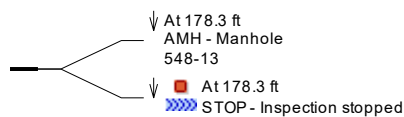
Project Name: Dimond DOT 2017	Mainline ID: 548-9 - 548-13	City: Anchorage	Address: Dimond Blvd
Start date/time: 7/31/2017	Pipe width: 48	Pipe type: CMP	Surface condition:
Direction: Downstream	Surveyed footage: 178.3	Operator: Brandon Markson	Weather:



Notes: 548-9 to 548-13

- 48-in. CMP
- 178 LF
- Corrosion w/pitting & metal loss, 5:00 & 7:00 position along length of the pipe.
- Invert may have fractures covered by debris & water.
- Flow: 2"
- Grade score of: 3

100.0 ft



Main Inspection with Pipe-Run Graph

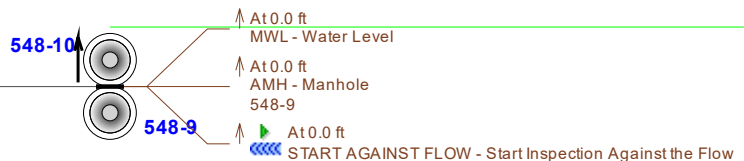
Project Name: Dimond DOT 2017	Mainline ID: 548-10 to 548-9	City: Anchorage	Address: Dimond Blvd
Start date/time: 7/31/2017	Pipe width: 	Pipe height: 18	Pipe type: CMP
Direction: UPSTREAM	Surveyed footage: 84.8	Operator: Brandon Markson	Comments:

Notes: 548-10 to 548-9

- 18-in. CMP
- 85 LF
- Minor corrosion, 5:00 & 7:00 position along length of the pipe.
- Flow: Minimal
- Grade score of: 1



Surveyed length: 84.8 ft

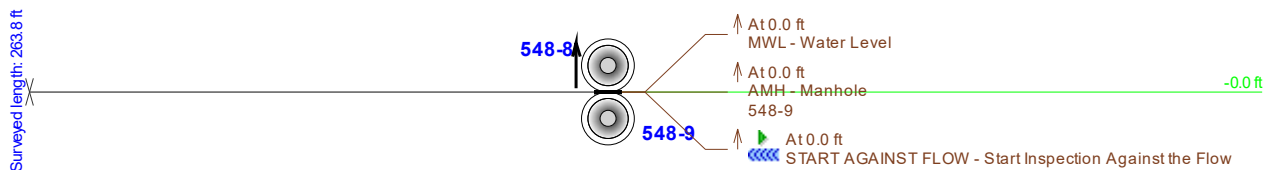
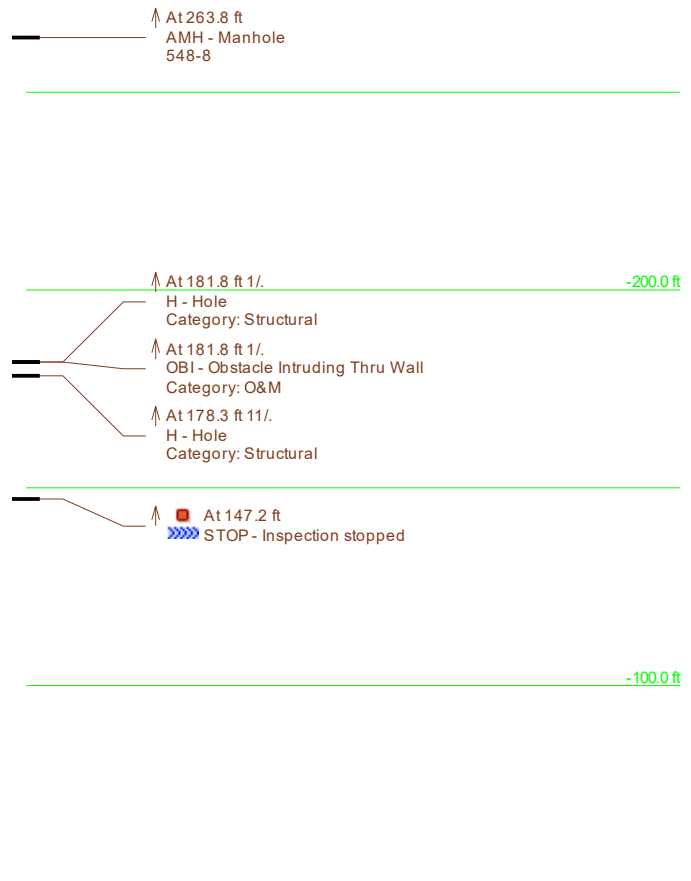


Main Inspection with Pipe-Run Graph

Project Name: Dimond DOT 2017		Mainline ID: <u>548-8 to 548-9</u>		City: Anchorage	Address: Dimond Blvd	
Start date/time: 7/31/2017	Pipe width: 	Pipe height: 48	Pipe type: CMP	Surface condition: 		Weather:
Direction: UPSTREAM	Surveyed footage: 263.8		Operator: Brandon Markson		Comments 	

Notes: 548-8 to 548-9

- 48-in. CMP
- 264 LF
- Corrosion w/pitting & metal loss, 5:00 & 7:00 position along length of the pipe.
- Invert may have fractures covered by debris & water.
- 2" Dia. holes 12:00, Sta.1+70.
- Two 2" Dia. cable utility holes, 11:00 & 2:00 position, Sta. 1+78 & Sta. 1+81.
- Obstruction intruding through wall, Sta. 1+81.
- 2" fracture, 5:00 position, Sta. 2+62.
- 10% Max. Ovality issue, Sta.1+37 to 1+81.
- Flow: 2" to 4"
- Grade score of: 3

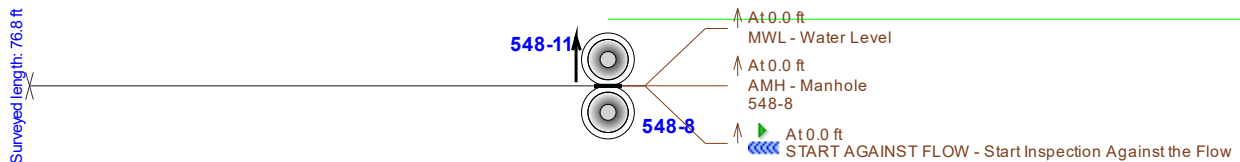


Main Inspection with Pipe-Run Graph

Project Name: Dimond DOT 2017	Mainline ID: <u>548-11 to 548-8</u>	City: Anchorage	Address: Dimond Blvd
Start date/time: 7/31/2017	Pipe width: 	Pipe height: 18	Pipe type: CMP
Direction: UPSTREAM	Surveyed footage: 76.8	Operator: Brandon Markson	Comments:

Notes: 548-11 to 548-8

- 18-in. CMP
- 77 LF, GIS 95 LF
- Corrosion w/pitting & possible metal loss, 5:00 & 7:00 position, intermittently along pipe.
- Flow: Minimal
- Grade score of: 2



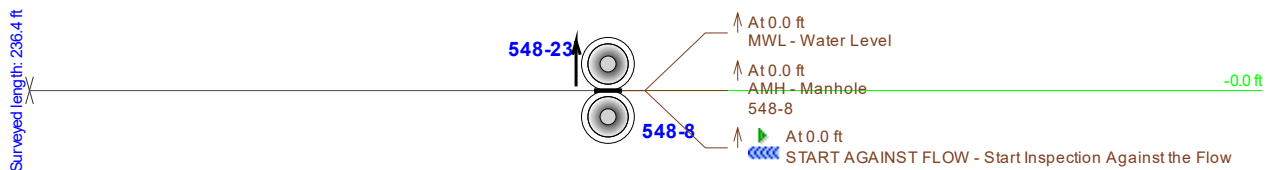
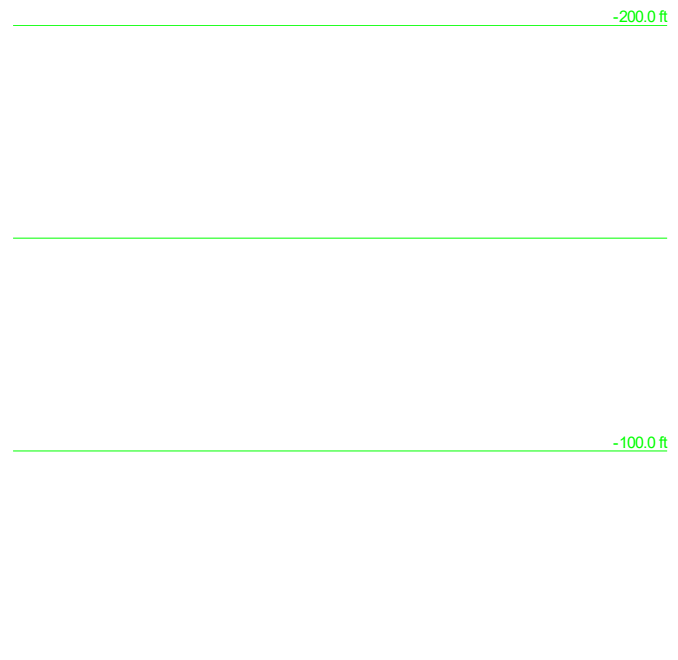
Main Inspection with Pipe-Run Graph

Project Name: Dimond DOT 2017	Mainline ID: 548-23 to 548-8	City: Anchorage	Address: Dimond Blvd
Start date/time: 7/31/2017	Pipe width: 36	Pipe height: CMP	Surface condition:
Direction: UPSTREAM	Surveyed footage: 236.4	Operator: Brandon Markson	Weather:



Notes: 548-23 to 548-8

- 36-in. CMP
- 236 LF
- Corrosion w/pitting & possible metal loss, 5:00 & 7:00 position along length of the pipe.
- Deformation 7:00 position, Sta. 0+70. No flow reduction.
- Pipe has several bellies. Flow depth varies from 4" to 1".
- Minor joint separation, 0.5' at 6:00 position, Sta. 1+76.
- Flow: 1" to 4"
- Grade score of: 3

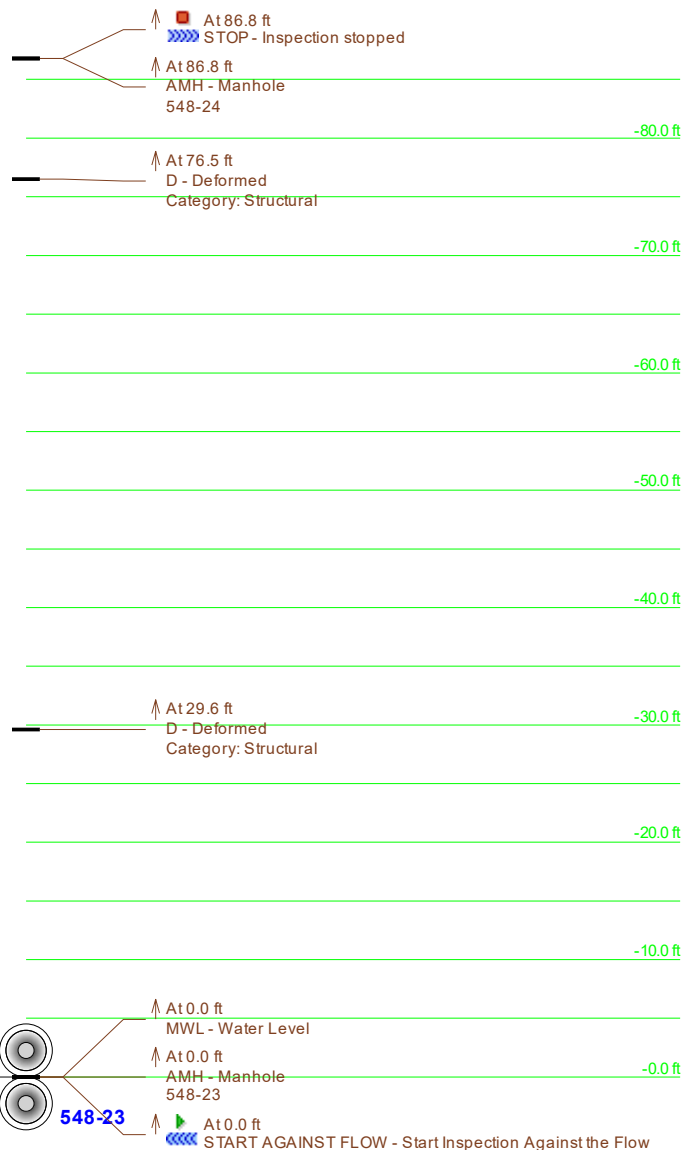


Main Inspection with Pipe-Run Graph

Project Name: Dimond DOT 2017	Mainline ID: 548-24 to 548-23	City: Anchorage	Address: Dimond Blvd
Start date/time: 7/31/2017	Pipe width: 18	Pipe height: 18	Pipe type: CMP
Direction: UPSTREAM	Surveyed footage: 86.8	Operator: Brandon Markson	Comments:

Notes: 548-24 to 548-23

- 18-in. CMP
- 87 LF
- Minor corrosion 5:00 & 7:00 position along length pipe.
- Corrosion w/pitting, 3:00 & 9:00, Sta. 0+75 to 0+85.
- Two deformations 12:00 & 1:00 at Sta. 0+29 & 0+75. No pipe flow reduction.
- Flow: Minimal
- Grade score of: 2

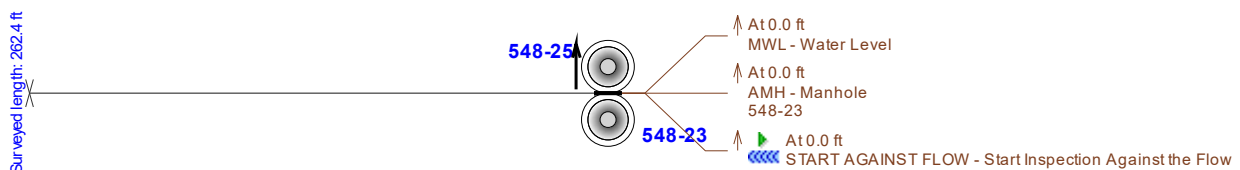
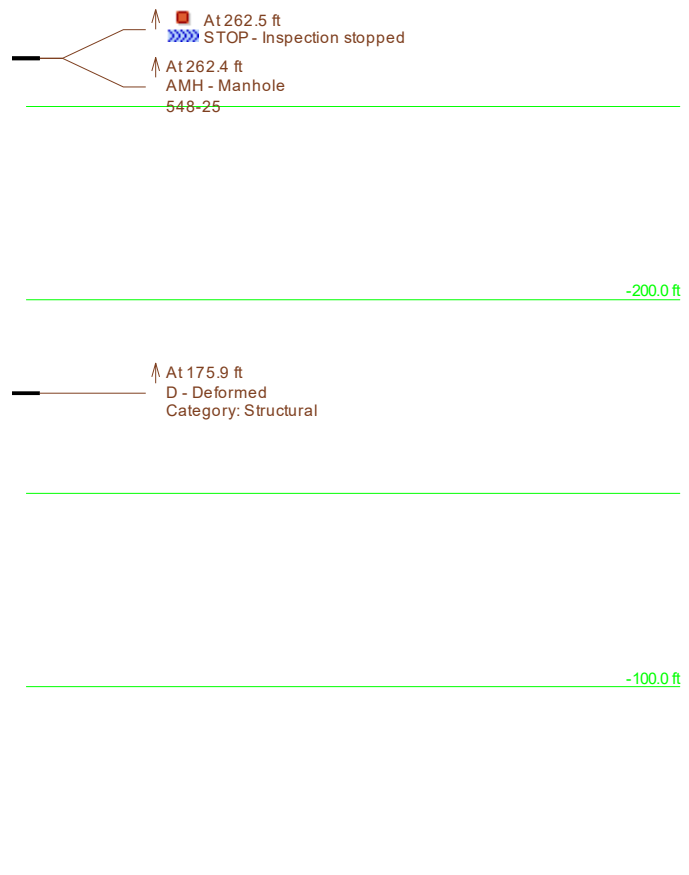


Main Inspection with Pipe-Run Graph

Project Name: Dimond DOT 2017	Mainline ID: 548-25 to 548-23	City: Anchorage	Address: Dimond Blvd
Start date/time: 7/31/2017	Pipe width: 36	Pipe height: 36	Pipe type: CMP
Direction: UPSTREAM	Surveyed footage: 262.4	Operator: Brandon Markson	Comments:

Notes: 548-25 to 548-23

- 36-in. CMP
- 263 LF
- Corrosion w/pitting & metal loss, 5:00 & 7:00 position along length pipe.
- Deformation 9:00 position, Sta. 1+76, no pipe flow reduction.
- Possible corrosion fractures at 5:00, Sta. 0+58 to 0+66 & 7:00, Sta. 1+18.
- Confirm before lining.
- Flow: 2"
- Grade score of: 3



Main Inspection with Pipe-Run Graph

Project Name: Dimond DOT 2017	Mainline ID: 548-26 to 548-25	City: Anchorage	Address: Dimond Blvd
Start date/time: 7/31/2017	Pipe width: 	Pipe height: 18	Pipe type: CMP
Direction: UPSTREAM	Surveyed footage: 96.8	Operator: Brandon Markson	Comments:

Notes: 548-26 to 548-25

- 18-in. CMP
- 97 LF
- Heavy corrosion w/metal loss, 3:00 5:00 position, Sta. 0+89 to 0+94.
- Joint separation 1" to 2" gap 11:00 to 2:00, Sta. 0+30.
- Debris 5:00 to 7:00 position length of pipe.
- Flow: Minimal
- Grade score of: 3

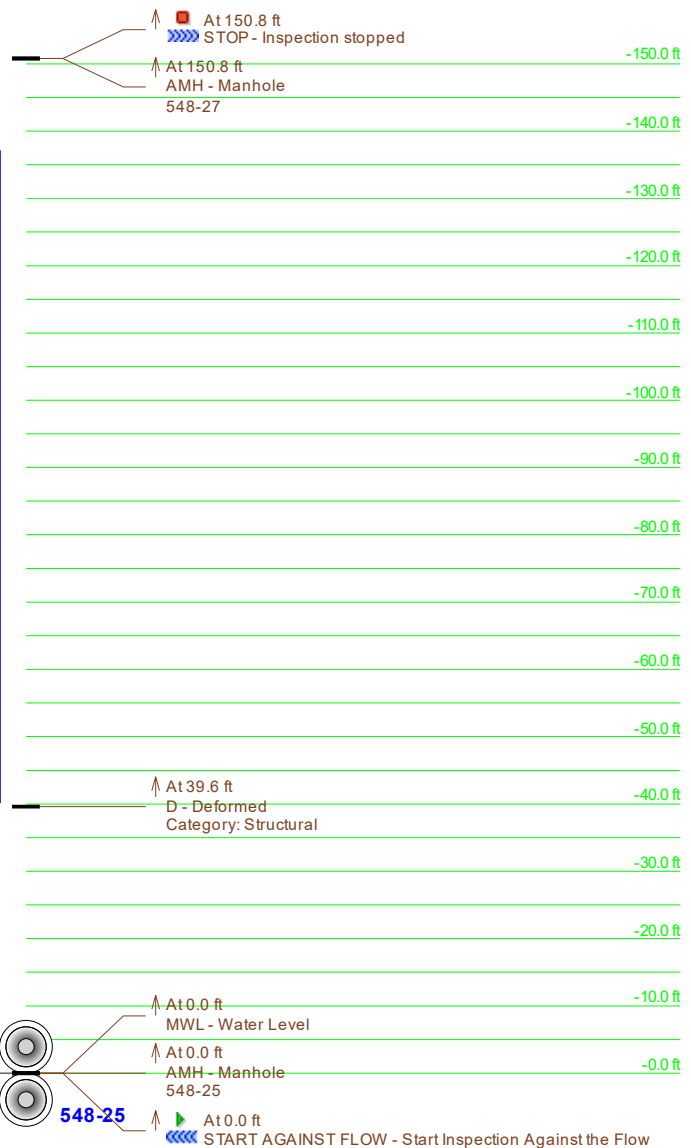


Main Inspection with Pipe-Run Graph

Project Name: Dimond DOT 2017	Mainline ID: 548-27 to 548-25	City: Anchorage	Address: Dimond Blvd
Start date/time: 7/31/2017	Pipe width: 36	Pipe height: CMP	Surface condition: Weather:
Direction: UPSTREAM	Surveyed footage: 150.8	Operator: Brandon Markson	Comments

Notes: 548-27 to 548-25

- 36-in. CMP
- 151 LF
- Deep corrosion pitting 5:00 Sta. 0+18 to 0+20.
- Corrosion w/pitting, 5:00 & 7:00, along length pipe.
- Deformations 12:00 at Sta. 0+39. No pipe flow reduction.
- Pipe makes several deflections to the to the south.
- Flow: 2" to 4"
- Grade score of: 3



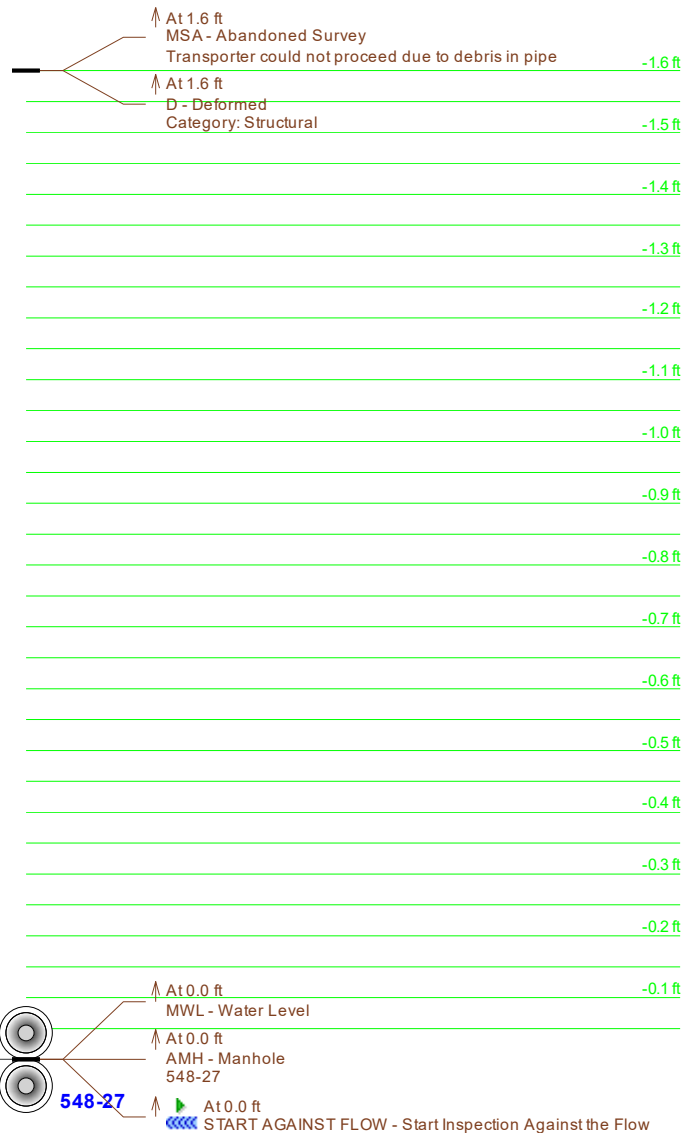
Surveyed length: 150.8 ft

Main Inspection with Pipe-Run Graph

Project Name: Dimond DOT 2017	Mainline ID: 548-265-548-27	City: Anchorage	Address: Dimond Blvd
Start date/time: 8/1/2017	Pipe width: 	Pipe height: 18	Pipe type: CMP
Direction: UPSTREAM	Surveyed footage: 1.6	Operator: Brandon Markson	Comments:

Notes: 548-265 to 548-27

- 18-in. CMP
- 35 LF
- 2-4" of debris in pipe
- 1-2" deflection visible in 1:00 position
- Camera transporter could not proceed due to debris, pipe walls appear to be in good condition from 8:00 to 4:00 position, view of invert obscured, pipe cleaning required to complete inspection
- Flow: None
- Grade score of: 1



Main Inspection with Pipe-Run Graph

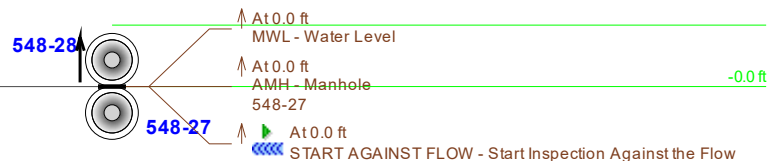
Project Name: Dimond DOT 2017	Mainline ID: 548-28-548-27	City: Anchorage	Address: Dimond Blvd
Start date/time: 8/1/2017	Pipe width: 36	Pipe type: CMP	Surface condition:
Direction: UPSTREAM	Surveyed footage: 82.0	Operator: Brandon Markson	Weather:

Notes: 548-28 to 548-27

- 36-in. CMP
- 82 LF
- Evidence of discoloration/corrosion in invert
- Pipe appears to be in good condition with no major visible defects, verify invert condition to determine if there is metal loss
- Flow: 1-2"
- Grade score of: 2



Surveyed length: 82.0 ft

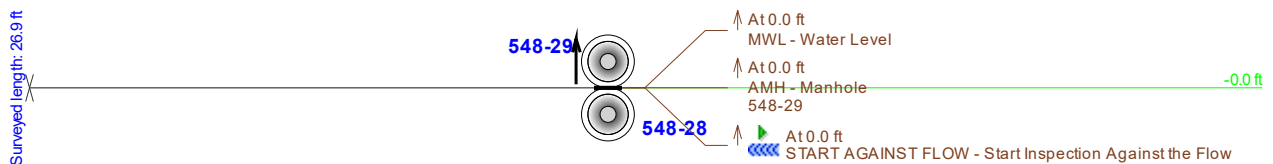
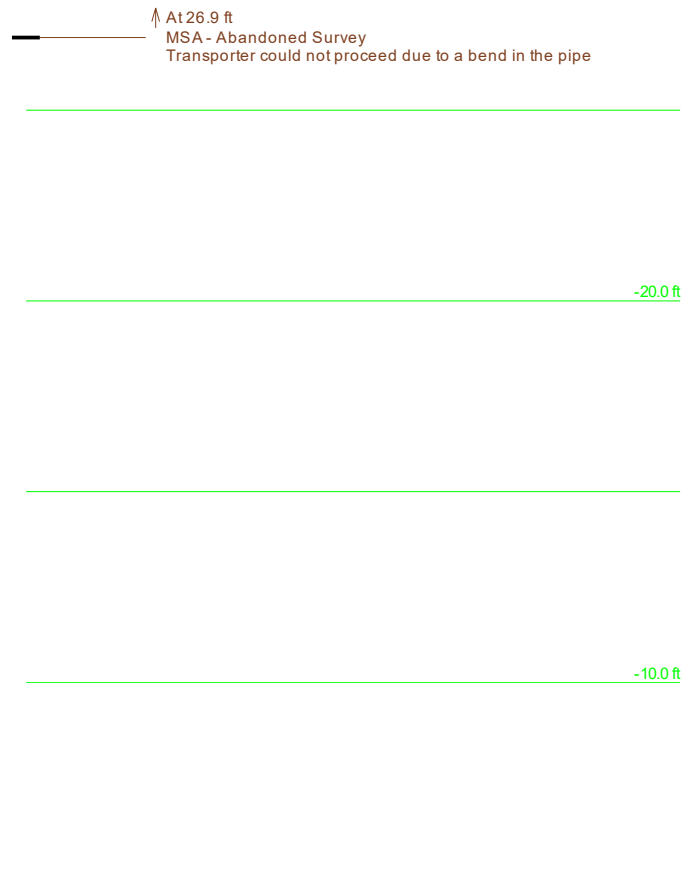


Main Inspection with Pipe-Run Graph

Project Name: Dimond DOT 2017	Mainline ID: 548-29-548-28	City: Anchorage	Address: Dimond Blvd
Start date/time: 8/1/2017	Pipe width: 	Pipe height: 18	Pipe type: CMP
Direction: UPSTREAM	Surveyed footage: 26.9	Operator: Brandon Markson	Comments:

Notes: 548-29 to 548-28

- 18-in. CMP
- 98 LF
- Pipe cleaned in order to perform inspection, 2-3 inches of residual debris in 7:00 position
- Deformation at joint at 26 LF in 12:00 position, camera could not pass
- Zoomed to end, no major defects visible
- Evaluate causes for debris buildup in pipe
- Flow: None
- Grade score of: 1

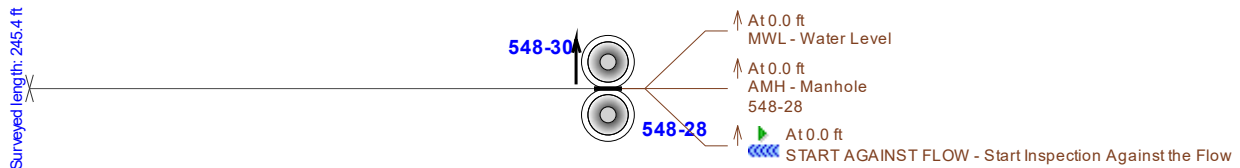
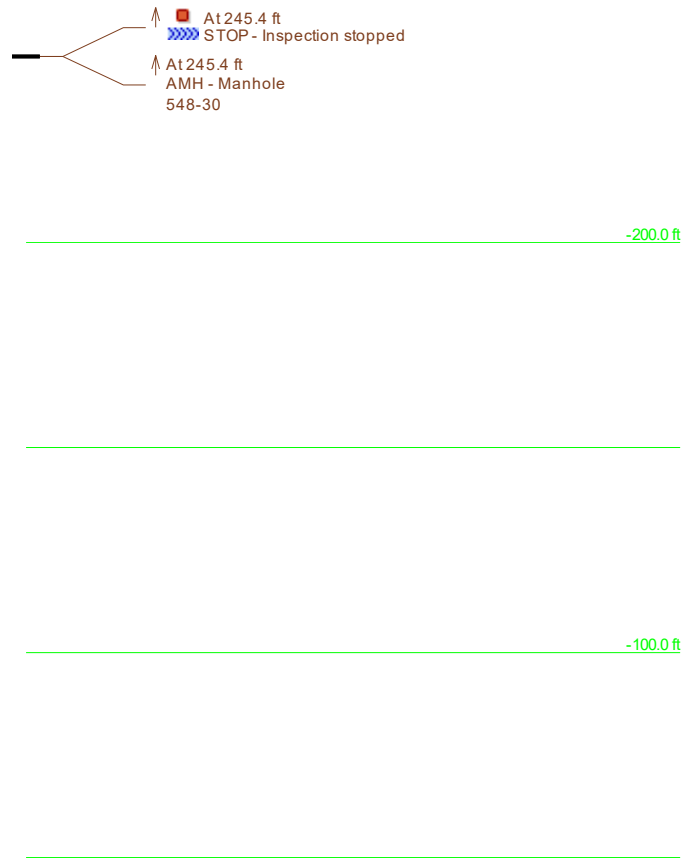


Main Inspection with Pipe-Run Graph

Project Name: Dimond DOT 2017	Mainline ID: 548-30-548-28	City: Anchorage	Address: Dimond Blvd
Start date/time: 8/1/2017	Pipe width: 36	Pipe height: CMP	Surface condition: Weather:
Direction: UPSTREAM	Surveyed footage: 245.4	Operator: Brandon Markson	Comments

Notes: 548-30 to 548-28

- 36-in. CMP
- 245 LF
- Evidence of discoloration/corrosion in invert 5:00 to 7:00 position
- Possible pin hole in 9:00 position at 18 LF
- Piece of spigot appears to be folded inward at joint at 53 LF
- Evidence of corrosion in 5:00 position at 76 LF
- Root infiltration at joint at 83 LF
- Visible soil in 12:00 position at joint at 144 LF
- Evidence of infiltration at joint at 173 LF
- Verify invert condition to determine if there is metal loss
- Flow: 1-2"
- Grade score of: 3

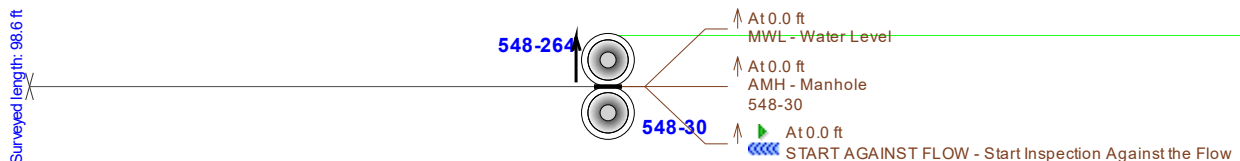


Main Inspection with Pipe-Run Graph

Project Name: Dimond DOT 2017	Mainline ID: 548-264-548-30	City: Anchorage	Address: Dimond Blvd
Start date/time: 8/1/2017	Pipe width: 	Pipe height: 18	Pipe type: CMP
Direction: UPSTREAM	Surveyed footage: 98.6	Operator: Brandon Markson	Comments:

Notes: 548-264 to 548-30

- 18-in. CMP
- 99 LF
- 0-3" debris in pipe throughout pipe
- Visible discoloration in invert at 11 LF
- Discoloration/Corrosion in 3:00 and 6:00 position from 74 LF to 93 LF, increases from discoloration to metal loss
- Flow: None
- Grade score of: 3



Main Inspection with Pipe-Run Graph

Project Name: Dimond DOT 2017	Mainline ID: 548-31-548-30	City: Anchorage	Address: Dimond Blvd
Start date/time: 8/1/2017	Pipe width: 	Pipe height: 12	Pipe type: CMP
Direction: Downstream	Surveyed footage: 296.4	Operator: Brandon Markson	Comments:

Surveyed length: 296.4 ft

548-31



- At 0.0 ft
START WITH FLOW - Start Inspection With the Flow
- At 0.0 ft
AMH - Manhole
548-31
- At 0.0 ft
MWL - Water Level

Notes: 548-31 to 548-30

- 12-in. Fin Drain
- 307 LF
- Discoloration in pipe wall from 3:00 position to 9:00 position, visible corrosion in invert where debris cover is minimal
- Varying levels of debris throughout pipe, pipe 1/4 full of debris at end of survey
- Bent spigot ends at joint at 1.4 LF, 33 LF, 64 LF, 93 LF, 126 LF, 155 LF,
- Unidentified pipe debris at 64 LF
- 0-1" deformation in 9:00 position at 72 LF
- 2-3" deformation in 3:00 position at 112 LF
- Root infiltration at joint, 126 LF, 217 LF
- Flow: None
- Grade score of: 2

100.0 ft

- At 112.4 ft
D - Deformed
Category: Structural

200.0 ft

- At 296.4 ft
MSA - Abandoned Survey
Transporter could not proceed due to mud in the pipe

Main Inspection with Pipe-Run Graph

Project Name: Dimond DOT 2017	Mainline ID: 548-31-548-30	City: Anchorage	Address: Dimond Blvd
Start date/time: 8/1/2017	Pipe width: 36	Pipe height: 36	Pipe type: CMP
Direction: UPSTREAM	Surveyed footage: 304.0	Operator: Brandon Markson	Comments:

Notes: 548-31 to 548-30

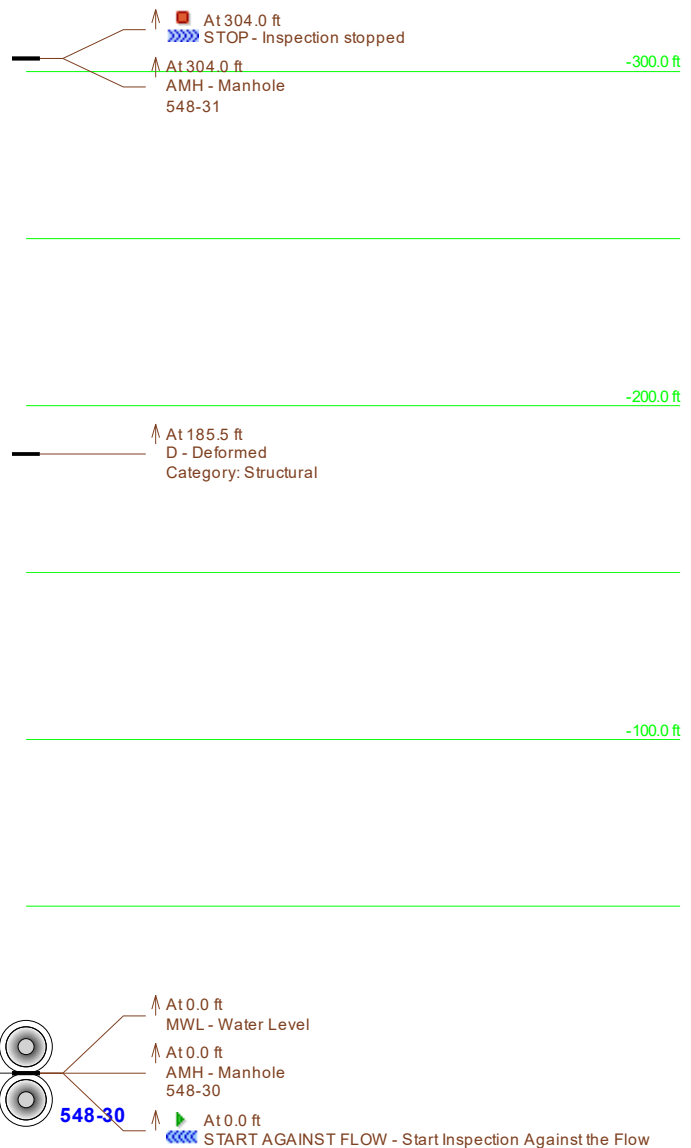
- 36-in. CMP
- 304 LF
- Evidence of discoloration/corrosion in invert 5:00 to 7:00 position
- Piece of spigot appears to be folded inward at joint at 50 LF in 12:00 position
- 1-2" deformation in 1:00 position at 186 LF
- 0-1" deformation in 11:00 position at 283 LF
- No visible major defects
- Flow: 1-2"
- Grade score of: 2

Surveyed length: 304.0 ft

548-31



548-30

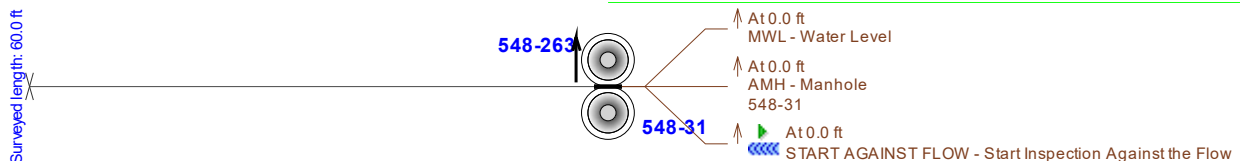
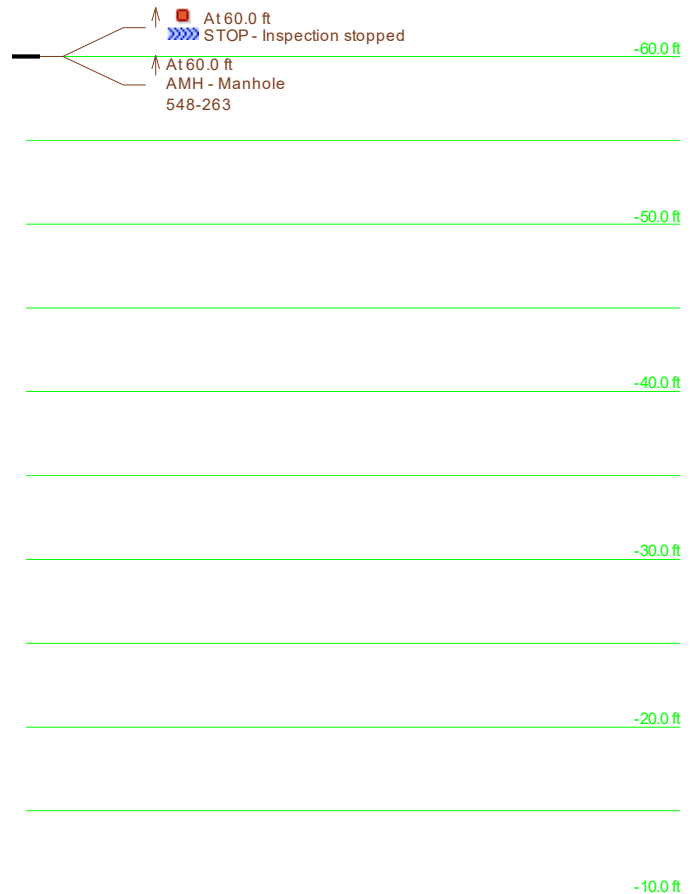


Main Inspection with Pipe-Run Graph

Project Name: Dimond DOT 2017	Mainline ID: 548-263-548-31	City: Anchorage	Address: Dimond Blvd
Start date/time: 8/1/2017	Pipe width: 	Pipe height: 18	Pipe type: CMP
Direction: UPSTREAM	Surveyed footage: 60.0	Operator: Brandon Markson	Comments:

Notes: 548-263 to 548-31

- 18-in. CMP
- 60 LF
- Minimal debris in pipe
- Visible discoloration in invert
- Corrosion in 3:00 and 6:00 position from 45 LF to 56 LF
- 2-3" of debris last 8 LF of pipe
- Flow: None
- Grade score of: 3

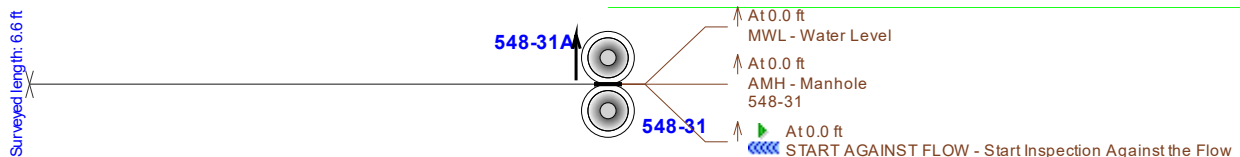
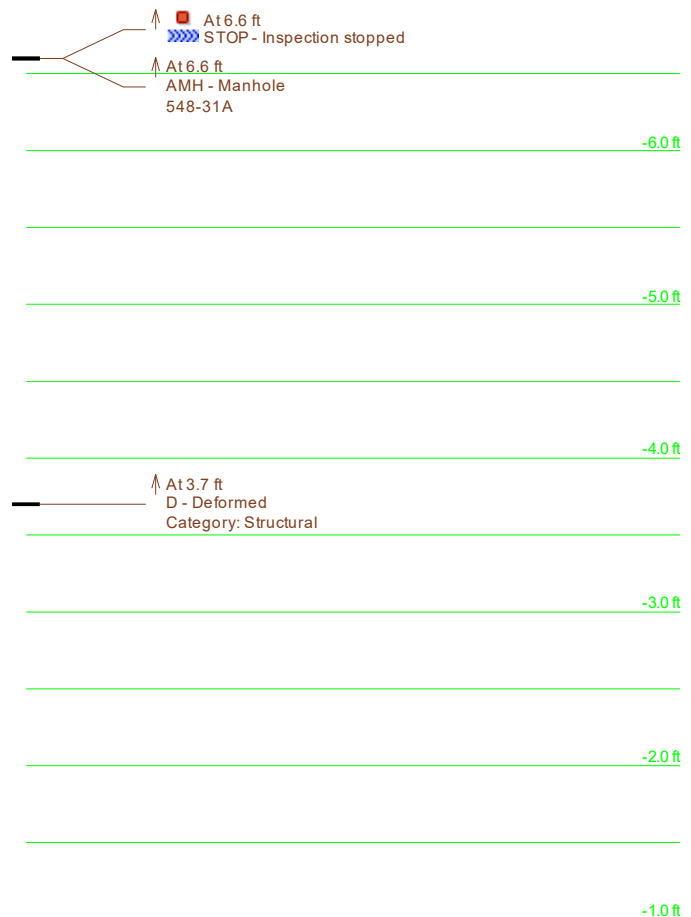


Main Inspection with Pipe-Run Graph

Project Name: Dimond DOT 2017	Mainline ID: 548-31A-548-31	City: Anchorage	Address: Dimond Blvd
Start date/time: 8/1/2017	Pipe width: 12	Pipe type: CMP	Surface condition:
Direction: UPSTREAM	Surveyed footage: 6.6	Operator: Brandon Markson	Weather:

Notes: 548-31A to 548-31

- 18-in. CMP
- 7 LF
- 0-1" deformation in 9:00 position at 0.0 LF
- 1-2" deformation in 12:00 position at 4 LF
- Inspection ends at possible connection to parking lot drainage structure
- Flow: None
- Grade score of: 2

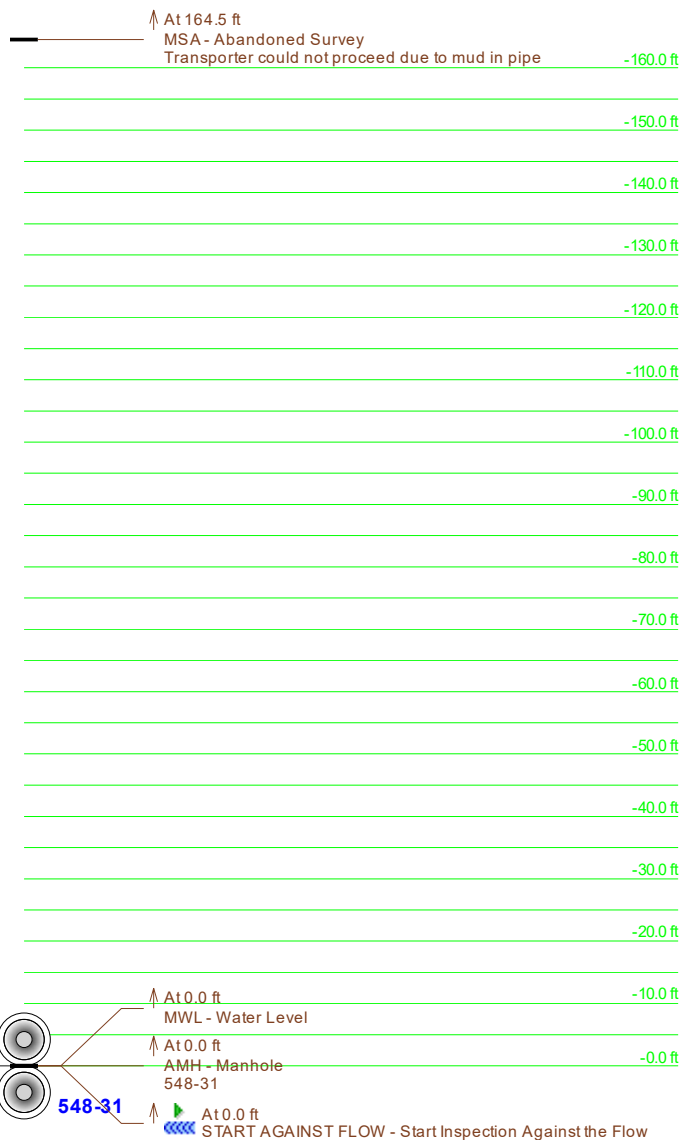


Main Inspection with Pipe-Run Graph

Project Name: Dimond DOT 2017	Mainline ID: 548-32-548-31	City: Anchorage	Address: Dimond Blvd
Start date/time: 8/1/2017	Pipe width: 12	Pipe height: 12	Pipe type: CMP
Direction: UPSTREAM	Surveyed footage: 164.5	Operator: Brandon Markson	Surface condition:
Weather: 			
Comments 			

Notes: 548-32 to 548-31

- 12-in. Fin Drain
- 222 LF
- Discoloration in pipe wall from 3:00 position to 9:00 position
- Pipe spigots bent at joint, 24 LF, 84 LF
- 0-1" debris buildup around thaw line, begins increasing at 147 LF to 2-3" at 165 LF, camera could not pass
- Organic material in 11:00-12:00 position at joint, 54 LF, 84 LF
- Visible root infiltration at joint, 115 LF, 147 LF
- Camera zoomed to organic buildup/root infiltration
- Flow: None
- Grade score of: 2



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Main Inspection with Pipe-Run Graph

Project Name: Dimond DOT 2017	Mainline ID: 548-32 - 548-31	City: Anchorage	Address: Dimond Blvd
Start date/time: 8/2/2017	Pipe width: 12	Pipe height: 12	Pipe type: CMP
Direction: Downstream	Surveyed footage: 5.6	Operator: Brandon Markson	Comments:

Surveyed length: 5.6 ft

548-32



- At 0.0 ft
START WITH FLOW - Start Inspection With the Flow
- At 0.0 ft
AMH - Manhole
548-32
- At 0.0 ft
MWL - Water Level

Notes: 548-32 to 548-31

- 12-in. CMP
- 222 LF
- 1-2" of debris
- Inspection from upstream end concluded due to debris depth, surveyed from upstream end on 8-1-17
- Flow: None
- Grade score of: N/A

1.0 ft

2.0 ft

3.0 ft

4.0 ft

5.0 ft

At 5.6 ft
MSA - Abandoned Survey

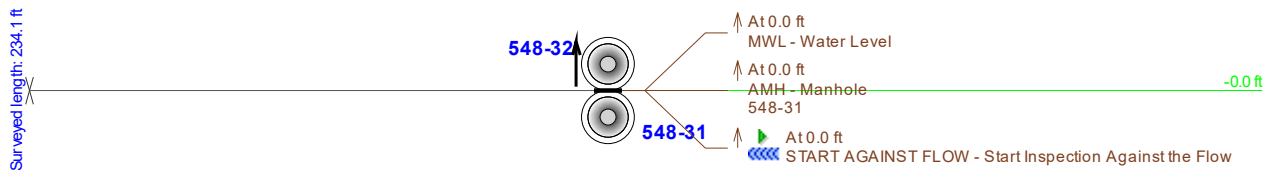
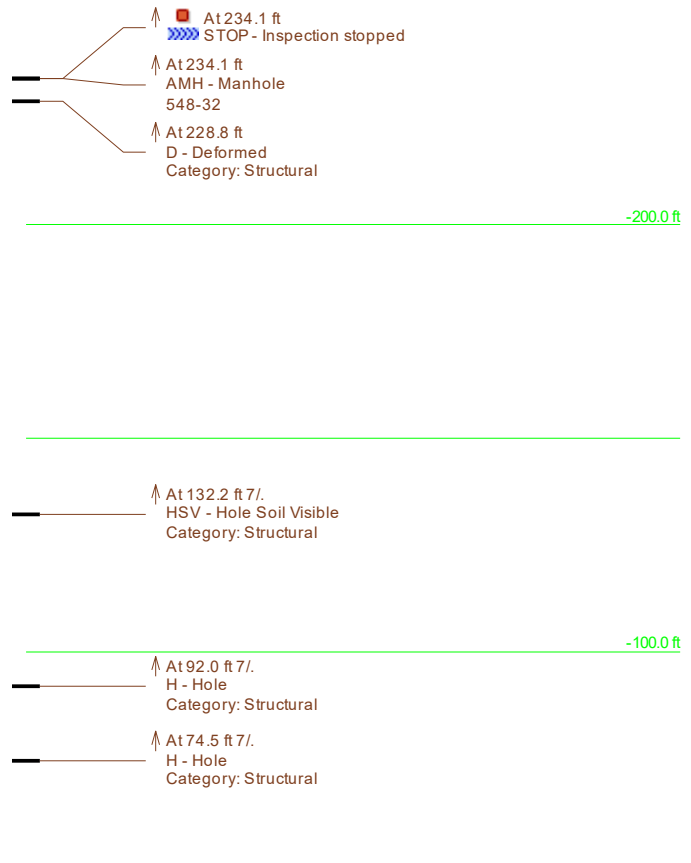
Transporter could not proceed due to mud in the pipe

Main Inspection with Pipe-Run Graph

Project Name: Dimond DOT 2017	Mainline ID: 548-32-548-31	City: Anchorage	Address: Dimond Blvd
Start date/time: 8/1/2017	Pipe width: 36	Pipe height: CMP	Surface condition: Weather:
Direction: UPSTREAM	Surveyed footage: 234.1	Operator: Brandon Markson	Comments

Notes: 548-32 to 548-31

- 36-in. CMP
- 234 LF
- Evidence of discoloration/corrosion in invert 5:00 to 7:00 position
- 0-1" deformation in 12:00 position at 46 LF
- Pipe deformation at joint at 73 LF, approximately 5-10% loss of cross sectional area
- Hole in pipe in 7:00 position at 74 LF, approximately 3 feet long, soil visible
- Hole in pipe in 7:00 position at 92 LF, 1-2 ft. long
- Hole in pipe, 7:00 position at 132 LF, soil visible, 2-3' long
- Pipe deformation in 12:00 position at 228 LF, approximately 10-20% loss of cross sectional area
- Flow: 1-2"
- Grade score of: 4

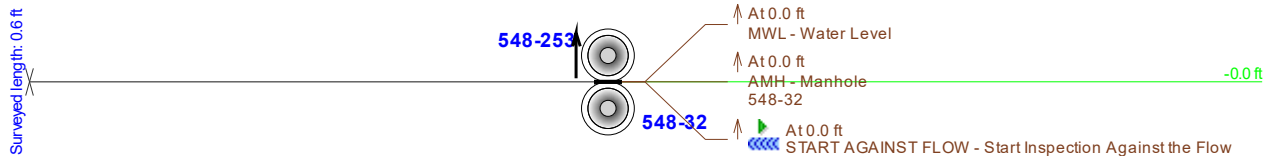


Main Inspection with Pipe-Run Graph

Project Name: Dimond DOT 2017	Mainline ID: 548-253 to 548-32	City: Anchorage	Address: Dimond Blvd
Start date/time: 8/2/2017	Pipe width: 	Pipe height: 12	Pipe type: CMP
Direction: UPSTREAM	Surveyed footage: 0.6	Operator: Brandon Markson	Comments:

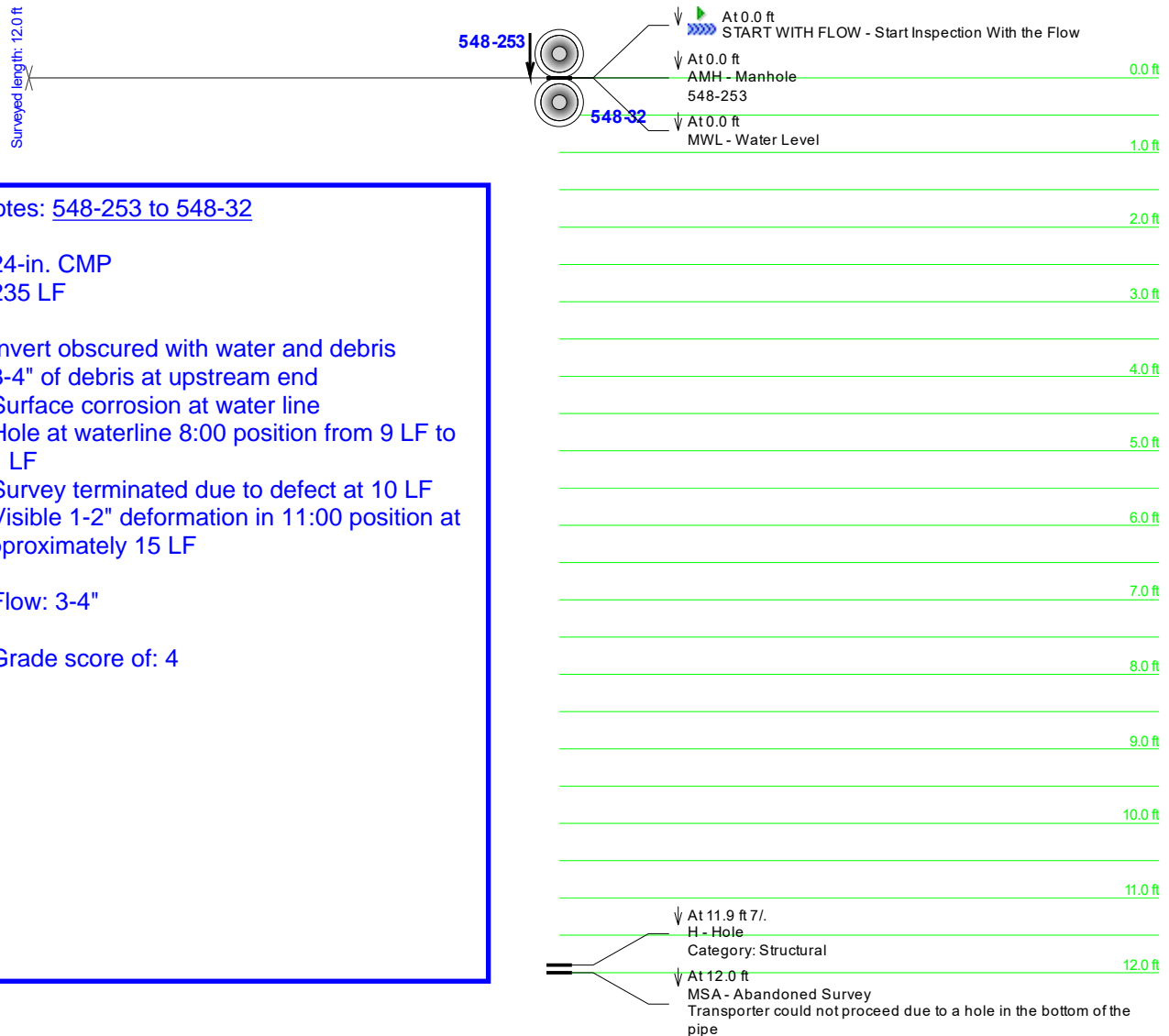
Notes: 548-253 to 548-32

- 12-in. CMP
- 235 LF
- 1-2" of debris, too much debris to complete inspection
- Flow: None
- Grade score of: N/A



Main Inspection with Pipe-Run Graph

Project Name: Dimond DOT 2017	Mainline ID: 548-253 - 548-32	City: Anchorage	Address: Dimond Blvd
Start date/time: 8/2/2017	Pipe width: 24	Pipe height: 24	Pipe type: CMP
Direction: Downstream	Surveyed footage: 12.0	Operator: Brandon Markson	Comments:

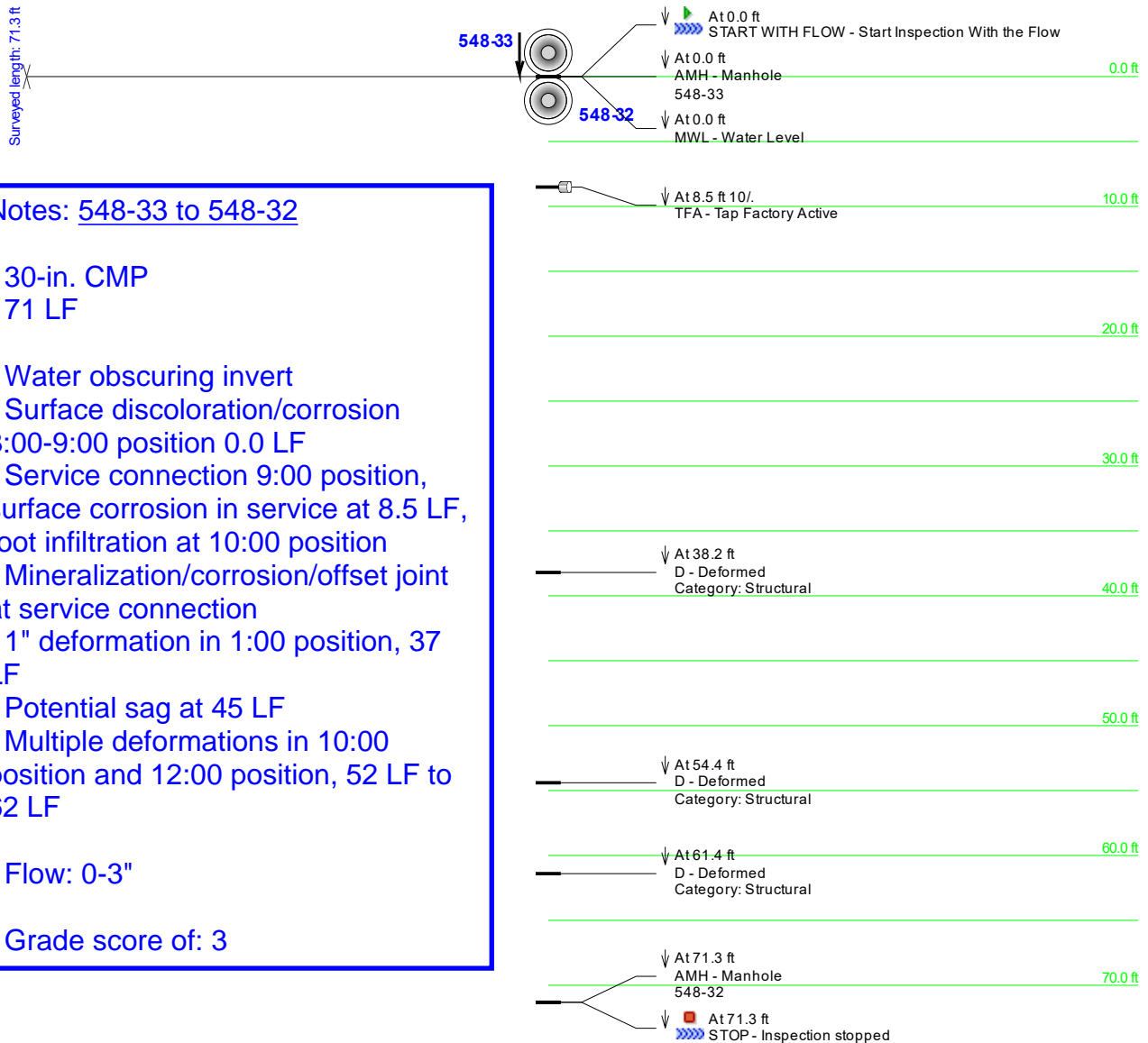


Notes: [548-253 to 548-32](#)

- 24-in. CMP
- 235 LF
- Invert obscured with water and debris
- 3-4" of debris at upstream end
- Surface corrosion at water line
- Hole at waterline 8:00 position from 9 LF to 11 LF
- Survey terminated due to defect at 10 LF
- Visible 1-2" deformation in 11:00 position at approximately 15 LF
- Flow: 3-4"
- Grade score of: 4

Main Inspection with Pipe-Run Graph

Project Name: Dimond DOT 2017	Mainline ID: 548-33 - 548-32	City: Anchorage	Address: Dimond Blvd
Start date/time: 8/2/2017	Pipe width: 	Pipe height: 30	Pipe type: CMP
Direction: Downstream	Surveyed footage: 71.3	Operator: Brandon Markson	Comments:



Notes: 548-33 to 548-32

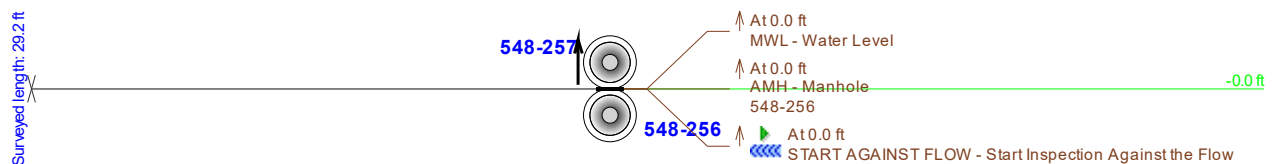
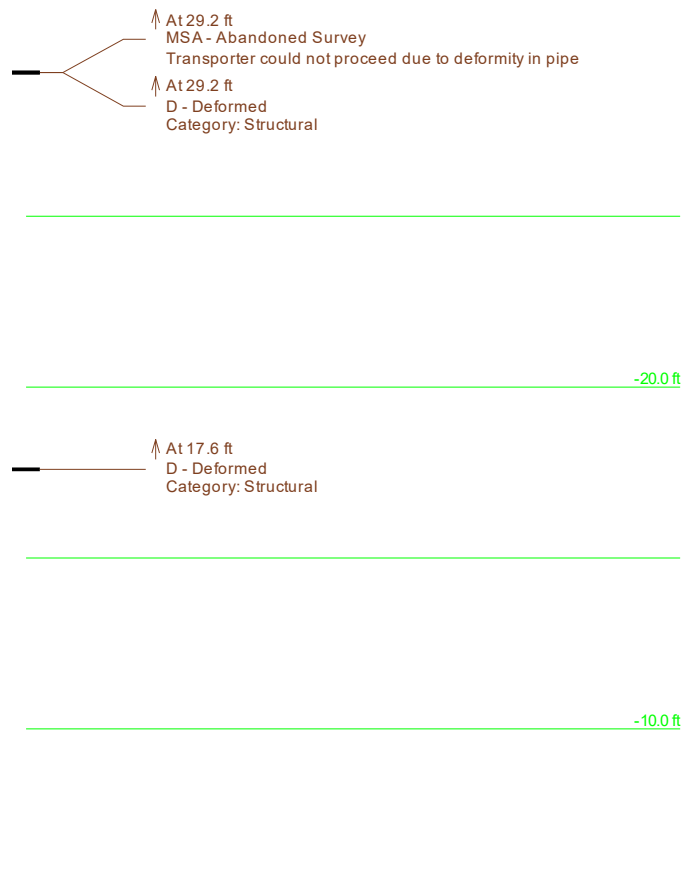
- 30-in. CMP
- 71 LF
- Water obscuring invert
- Surface discoloration/corrosion
3:00-9:00 position 0.0 LF
- Service connection 9:00 position,
surface corrosion in service at 8.5 LF,
root infiltration at 10:00 position
- Mineralization/corrosion/offset joint
at service connection
- 1" deformation in 1:00 position, 37
LF
- Potential sag at 45 LF
- Multiple deformations in 10:00
position and 12:00 position, 52 LF to
62 LF
- Flow: 0-3"
- Grade score of: 3

Main Inspection with Pipe-Run Graph

Project Name: Dimond DOT 2017	Mainline ID: 548-257 to 548-256	City: Anchorage	Address: Dimond Blvd
Start date/time: 7/22/2017	Pipe width: 	Pipe height: 18	Pipe type: CMP
Direction: UPSTREAM	Surveyed footage: 29.2	Operator: Brandon Markson	Comments:

Notes: 548-257 to 548-256

- 18-in. CMP
- 29 LF, GIS 100 LF
- Minor corrosion w/some metal loss.
- Deformation of pipe at 1:00 position, Sta. 0+18, 10% loss of flow.
- Deformation of pipe at 10:00 position, Sta. 0+29, 10% loss of flow.
- Camera could not pass deformation at Sta. 0+29.
- Flow: Minimal
- Grade score of: 3

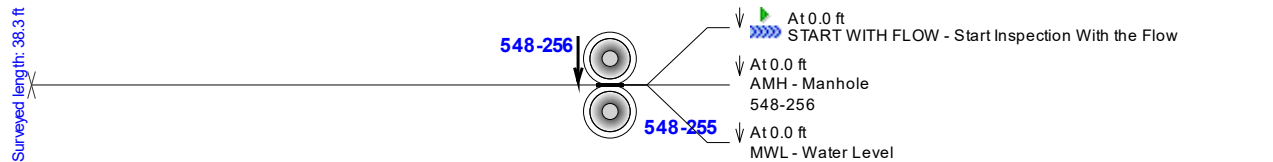


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Main Inspection with Pipe-Run Graph

Project Name: Dimond DOT 2017	Mainline ID: 548-256 - 548-255	City: Anchorage	Address: Dimond Blvd
Start date/time: 7/22/2017	Pipe width: 	Pipe height: 18	Pipe type: CMP
Direction: Downstream	Surveyed footage: 38.3	Operator: Brandon Markson	Comments:



Notes: 548-256 to 548-255

- 18-in. CMP
- 38 LF
- Cleaned pipe prior to CCTV.
- Corrosion w/material loss; corrosion holes & fractures, between 4:00 to 6:00 position, Sta. 0+06 to 0+10 & Sta. 0+25 to 0+35.
- Flow: Minimal
- Grade score of: 4



Main Inspection with Pipe-Run Graph

Project Name: Dimond DOT 2017	Mainline ID: 548-255 to 548-254	City: Anchorage	Address: Dimond Blvd
Start date/time: 7/22/2017	Pipe width: 18	Pipe height: 18	Pipe type: CMP
Direction: UPSTREAM	Surveyed footage: 30.1	Operator: Brandon Markson	Comments:

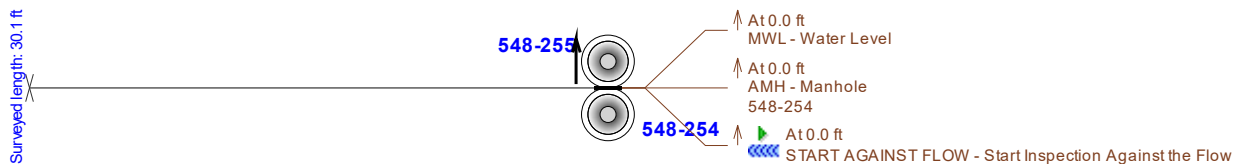
Notes: 548-255 to 548-254

- 18-in. CMP
- 30 LF, GIS 104 LF
- Minor corrosion w/some metal loss.
- Deformation & damage of pipe at 10:00 to 1:00 position, Sta. 0+30, 5% loss of flow.
- Appears that an external repair band has been placed on the pipe.
- Other than flow restriction the damaged area does not appear to be critical.
- Camera could not pass deformation at Sta. 0+30.
- Flow: 2" to 3"
- Grade score of: 3

↑ At 30.1 ft
 MSA - Abandoned Survey
 Transporter could not proceed due to slight deformity at a hole covered by a band -30.0 ft

-20.0 ft

-10.0 ft

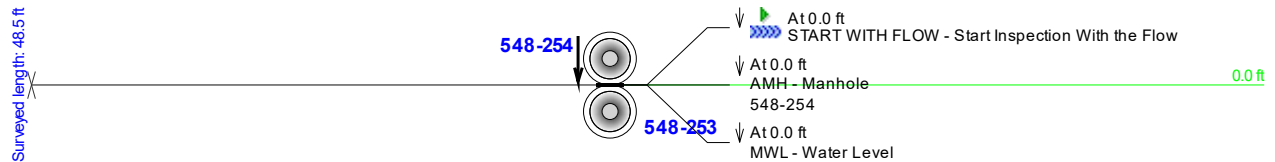


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Main Inspection with Pipe-Run Graph

Project Name: Dimond DOT 2017	Mainline ID: 548-254 - 548-253	City: Anchorage	Address: Dimond Blvd
Start date/time: 7/22/2017	Pipe width: 18	Pipe height: 18	Pipe type: CMP
Direction: Downstream	Surveyed footage: 48.5	Operator: Brandon Markson	Comments:



Notes: 548-254 to 548-253

- 18-in. CMP
- 49 LF
- Corrosion w/some metal loss at water-air interface.
- Displaced gasket at joint Sta. 0+26. 4:00 to 8:00 position under water. may or may not be an issue.
- Pipe must be drained & cleaned to determine any critical damage.
- Flow: 2" to 10"
- Grade score of: 2

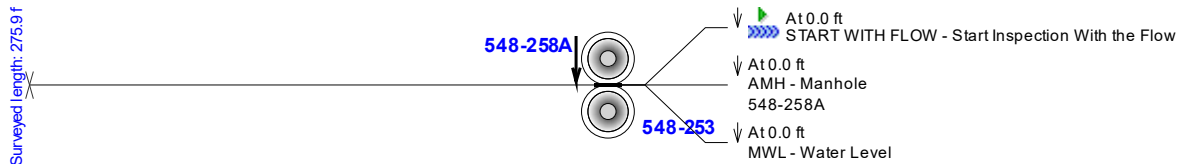
At 48.5 ft
 MSA - Abandoned Survey
 Transporter could not proceed due to mud in pipe as well as losing viewing capabilities

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Main Inspection with Pipe-Run Graph

Project Name: Dimond DOT 2017	Mainline ID: 548-258A - 548-253	City: Anchorage	Address: Dimond Blvd
Start date/time: 8/2/2017	Pipe width: 	Pipe height: 18	Pipe type: CMP
Direction: Downstream	Surveyed footage: 275.9	Operator: Brandon Markson	Comments:



Notes: 548-258A to 548-253

- 18-in. CMP
- 276 LF
- Pipe wall discoloration throughout
- Evidence of corrosion in invert
- Possible pipe sag 33 LF
- Root infiltration 5:00 position and invert, 45 LF
- 0-1" pipe deformation 10:00 position
- 1" deformation 10:00 position 80 LF
- 2-3" deformation 10:00 position 81 LF
- 0-1" deformation 10:00 position 88 LF
- Evidence of infiltration at joint 118 LF
- Evidence of infiltration at joint 215 LF
- Pitting in 10:00 position 230 LF
- Pitting in 5:00 position 232 LF
- Two 1" deformations 10:00 position 233 LF
- 1-2" deformation 10:00 position 236 LF
- Evidence of joint infiltration 245 LF
- Flow: Minimal
- Grade score of: 3

At 80.6 ft
 D - Deformed
 Category: Structural

100.0 ft

At 235.7 ft
 D - Deformed
 Category: Structural

200.0 ft

At 275.9 ft
 AMH - Manhole
 548-253

At 275.9 ft
 STOP - Inspection stopped

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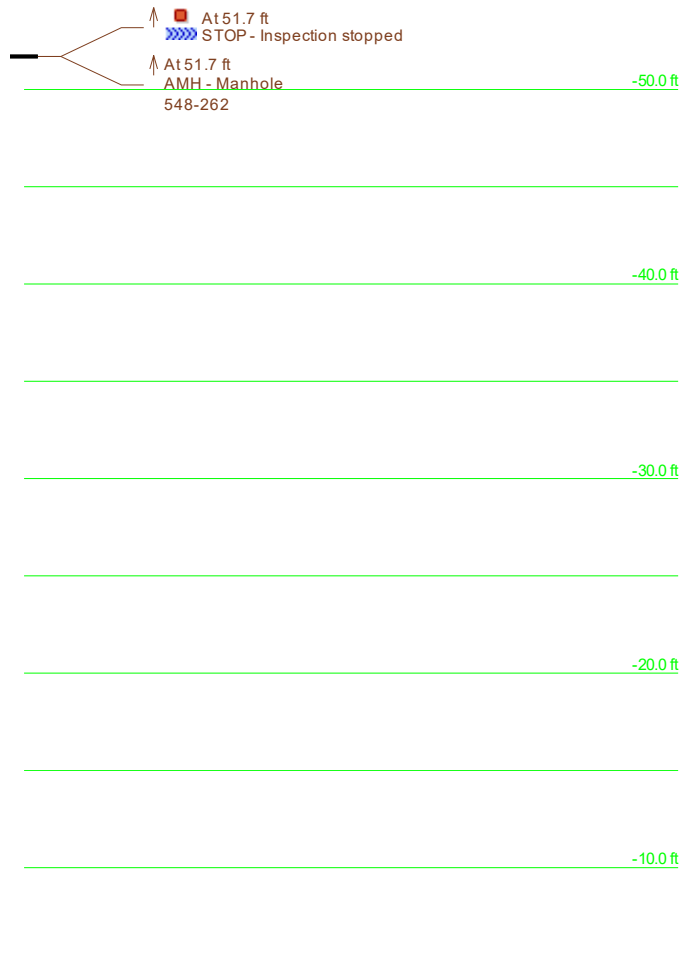


Main Inspection with Pipe-Run Graph

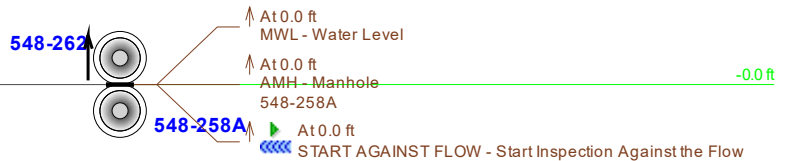
Project Name: Dimond DOT 2017	Mainline ID: 548-262 to 548-258A	City: Anchorage	Address: Dimond Blvd
Start date/time: 8/2/2017	Pipe width: 18	Pipe height: 18	Pipe type: CMP
Direction: UPSTREAM	Surveyed footage: 51.7	Operator: Brandon Markson	Comments:

Notes: [548-262 to 548-258A](#)

- 18-in. CMP
- 52 LF
- 27 LF, 0-1" debris buildup
- No defects observed
- Flow: None
- Grade score of: 1



Surveyed length: 51.7 ft



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Main Inspection with Pipe-Run Graph

Project Name:	Mainline ID:	City:	Address:		
Dimond DOT 2017	548-258-548-258A	Anchorage	Dimond Blvd		
Start date/time:	Pipe width:	Pipe height:	Pipe type:	Surface condition:	Weather:
8/2/2017		18	CMP		
Direction:	Surveyed footage:	Operator:	Comments		
UPSTREAM	29.3	Brandon Markson			

Notes: [548-258 to 548-258A](#)

- 18-in. CMP
- 29 LF
- Visible discoloration in invert at 15 LF
- No visible defects observed
- Flow: Minimal
- Grade score of: 1

At 29.3 ft
STOP - Inspection stopped
At 29.3 ft
AMH - Manhole
548-258

-20.0 ft

-10.0 ft

Surveyed length: 29.3 ft

548-258

At 0.0 ft
MWL - Water Level

At 0.0 ft
AMH - Manhole
548-258A

At 0.0 ft
START AGAINST FLOW - Start Inspection Against the Flow

-0.0 ft

Main Inspection with Pipe-Run Graph

Project Name: Dimond DOT 2017	Mainline ID: 548-259-548-258	City: Anchorage	Address: Dimond Blvd
Start date/time: 8/2/2017	Pipe width: 18	Pipe height: 18	Pipe type: CMP
Direction: UPSTREAM	Surveyed footage: 132.7	Operator: Brandon Markson	Comments:

Notes: [548-259 to 548-258](#)

- 18-in. CMP
- 133 LF
- 0-1" of debris
- No visible defects observed
- Flow: Minimal
- Grade score of: 1



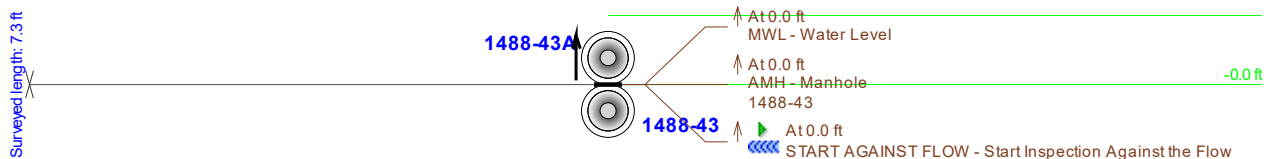
Main Inspection with Pipe-Run Graph

Project Name: Dimond DOT 2017	Mainline ID: 1488-43A to1488-43	City: Anchorage	Address: Dimond Blvd
Start date/time: 7/22/2017	Pipe width: 18	Pipe height: 18	Pipe type: CMP
Direction: UPSTREAM	Surveyed footage: 7.3	Operator: Brandon Markson	Comments:



Notes: 1488-43A to1488-43

- 18-in. CMP
- 7 LF
- No corrosion interior pipe.
- Flow: Minimal
- Grade score of: 1

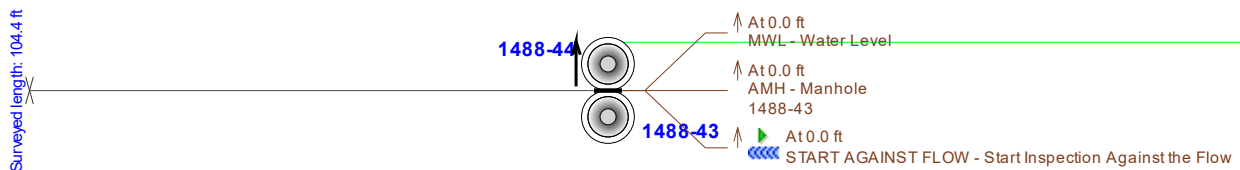
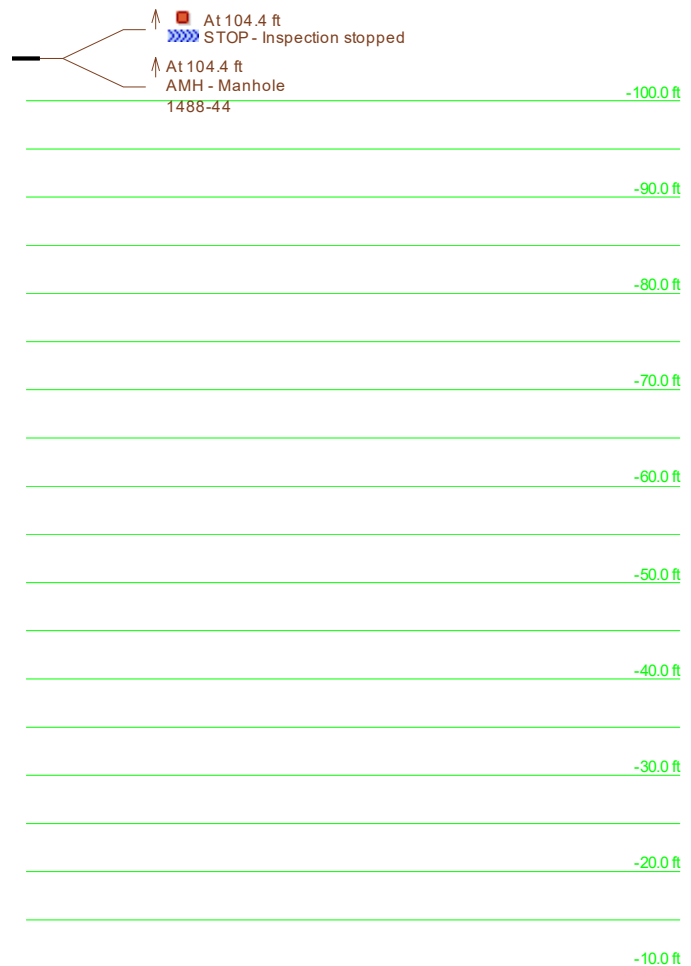


Main Inspection with Pipe-Run Graph

Project Name: Dimond DOT 2017	Mainline ID: 1488-44 to 1488-43	City: Anchorage	Address: Dimond Blvd
Start date/time: 7/22/2017	Pipe width: 60	Pipe height: 60	Pipe type: CMP
Direction: UPSTREAM	Surveyed footage: 104.4	Operator: Brandon Markson	Comments:

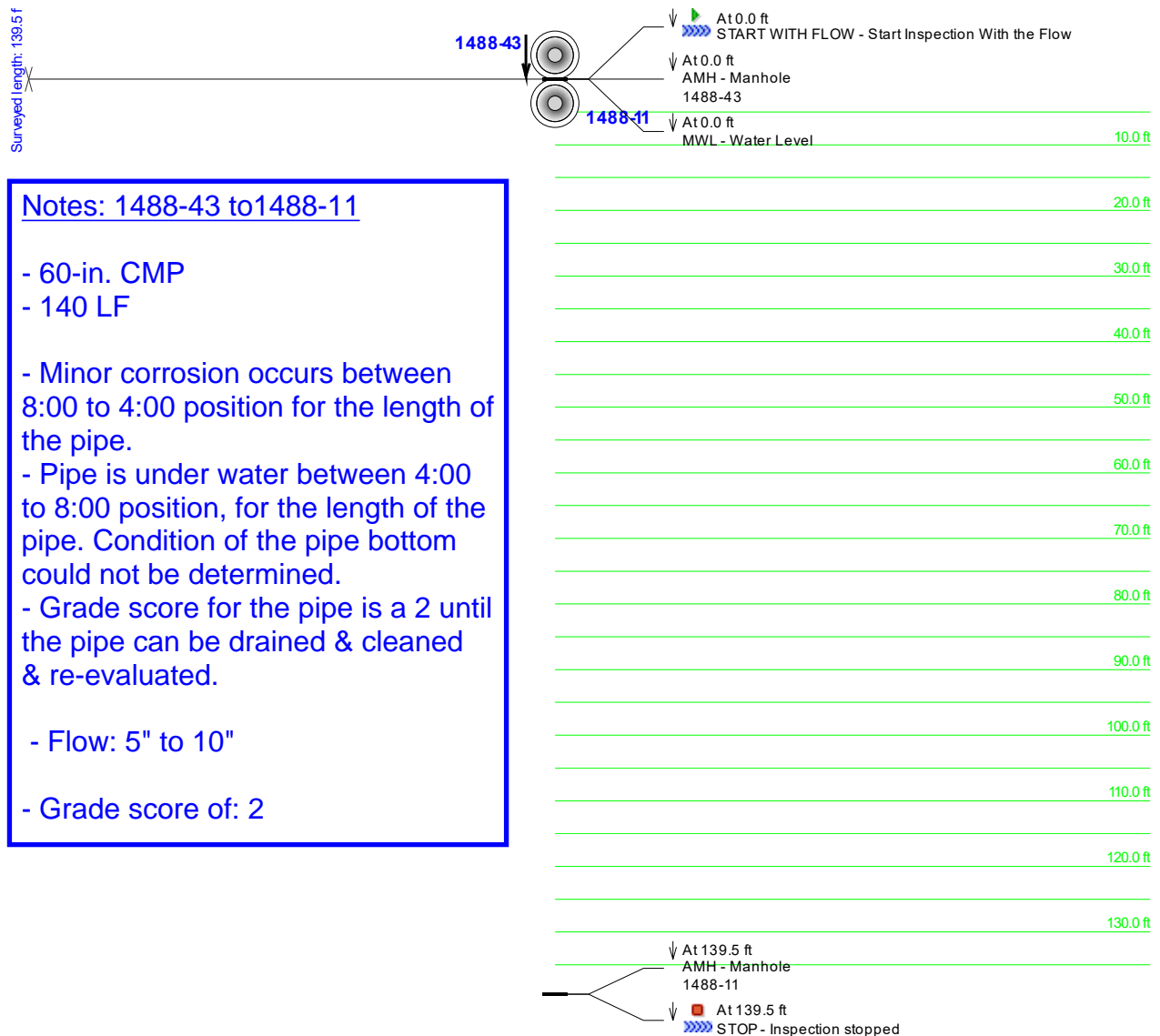
Notes: 1488-44 to 1488-43

- 60-in. CMP
- 104 LF
- Minor corrosion occurs, top of pipe, between 7:00 to 5:00 position for the length of the pipe.
- Pipe is under water between 5:00 to 7:00 position, for the length of the pipe. Condition of the pipe bottom could not be determined.
- Grade score for the pipe is a 2 until the pipe can be drained, cleaned & re-evaluated.
- Flow: 5"
- Grade score of: 2



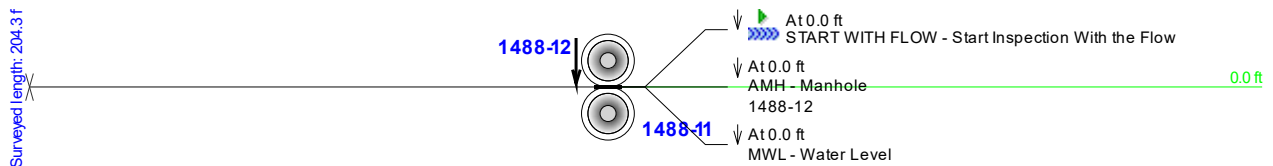
Main Inspection with Pipe-Run Graph

Project Name: Dimond DOT 2017	Mainline ID: 1488-43 - 1488-11	City: Anchorage	Address: Dimond Blvd
Start date/time: 7/22/2017	Pipe width: 60	Pipe type: CMP	Surface condition:
Direction: Downstream	Surveyed footage: 139.5	Operator: Brandon Markson	Weather:



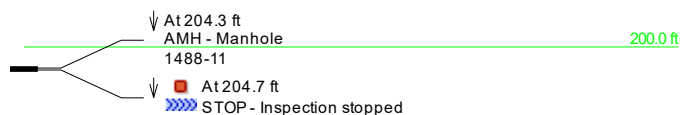
Main Inspection with Pipe-Run Graph

Project Name: Dimond DOT 2017	Mainline ID: 1488-12 - 1488-11	City: Anchorage	Address: Dimond Blvd
Start date/time: 7/22/2017	Pipe width: 72	Pipe height: 72	Pipe type: CMP
Direction: Downstream	Surveyed footage: 204.3	Operator: Brandon Markson	Comments:



Notes: 1488-12 to 1488-11

- 72-in. CMP
- 204 LF
- Corrosion w/some material loss
 5:00 to 7:00 position, intermittently
 for the length of the pipe.
- Corrosion sporadically appears
 were the thaw cable touches the
 pipe.
- Flow: 1" to 2"
- Grade score of: 2



Main Inspection with Pipe-Run Graph

Project Name: Dimond DOT 2017	Mainline ID: 1488-13 to 1488-12	City: Anchorage	Address: Dimond Blvd
Start date/time: 7/22/2017	Pipe width: 72	Pipe height: 72	Pipe type: CMP
Direction: UPSTREAM	Surveyed footage: 244.6	Operator: Brandon Markson	Comments:

↑ At 244.6 ft
 STOP - Inspection stopped
 ↑ At 244.6 ft
 AMH - Manhole
 1488-13

Notes: 1488-13 to 1488-12

- 72-in. CMP
- 245 LF
- Corrosion w/minor material loss from 5:00 to 7:00 position, for the length of the pipe.
- Corrosion fracture & holes 7:00 position Sta. 2+26 to 2+30.
- Metal structure, 10:00 to 2:00, Sta. 0+54 to 0+56. 10% reduction of flow in full pipe.
- Flow: 1" to 2"
- Grade score of: 3

-200.0 ft
 -100.0 ft
 ↑ At 55.2 ft 12/
 OBZ - Obstacle Other
 Category: O&M
 There is an unknown structure going through the top (12 o'clock) portion of the pipe

Surveyed length: 244.6 ft

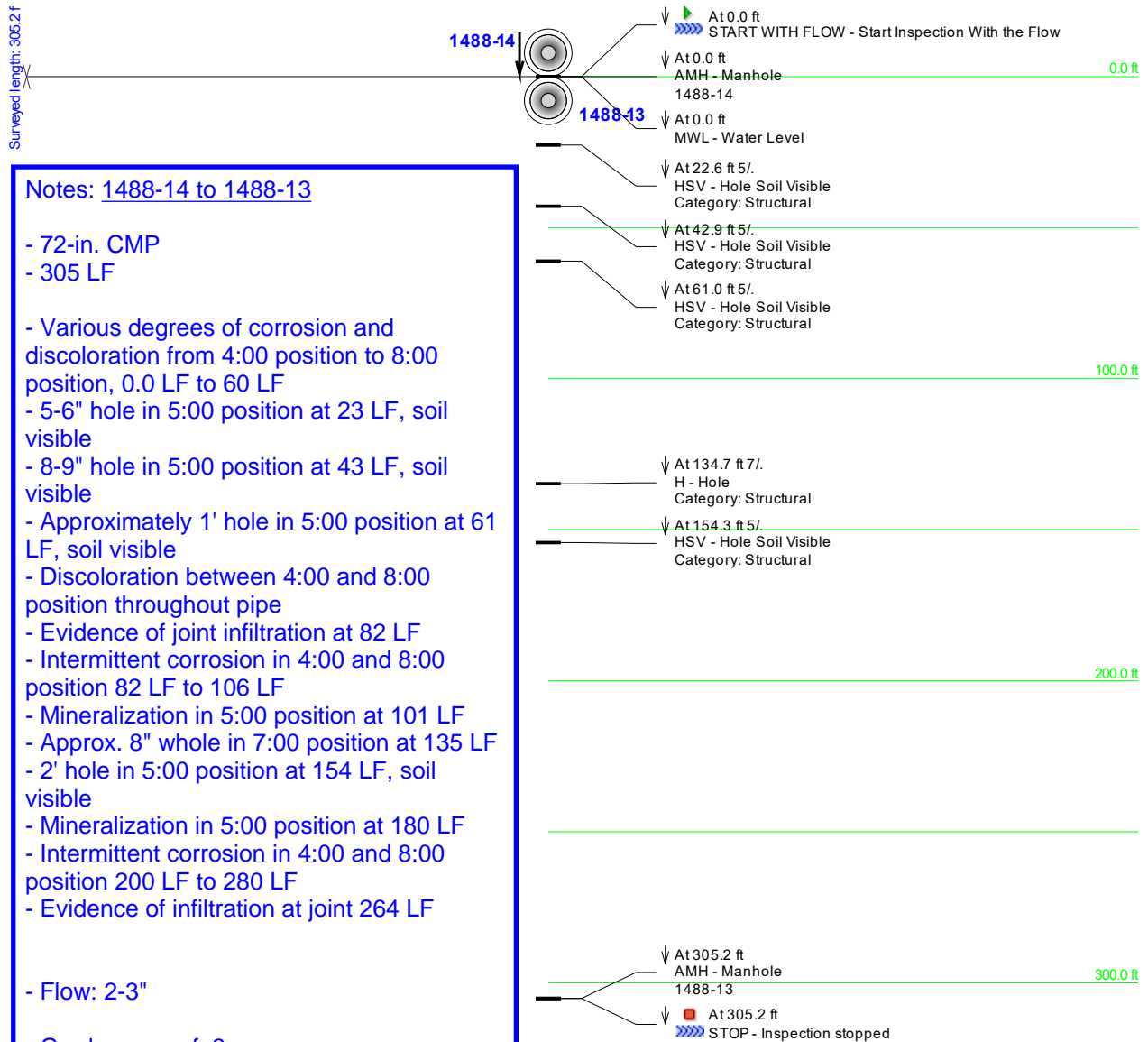
1488-13
 1488-12
 ↑ At 0.0 ft
 MWL - Water Level
 ↑ At 0.0 ft
 AMH - Manhole
 1488-12
 ↑ At 0.0 ft
 START AGAINST FLOW - Start Inspection Against the Flow

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Main Inspection with Pipe-Run Graph

Project Name: Dimond DOT 2017	Mainline ID: 1488-14 - 1488-13	City: Anchorage	Address: Dimond Blvd
Start date/time: 8/2/2017	Pipe width: 72	Pipe type: CMP	Surface condition:
Direction: Downstream	Surveyed footage: 305.2	Operator: Brandon Markson	Weather:

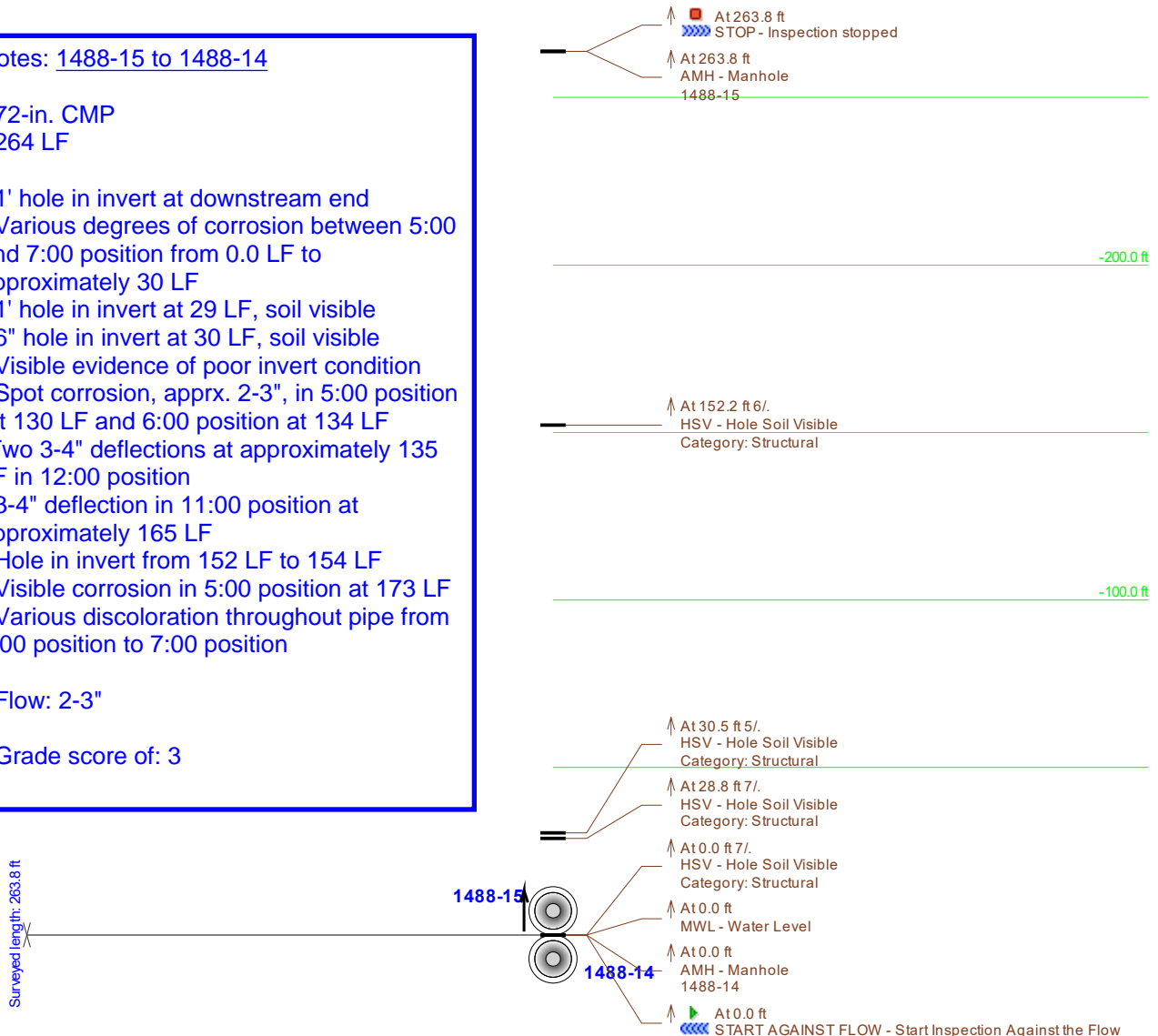


Main Inspection with Pipe-Run Graph

Project Name: Dimond DOT 2017	Mainline ID: 1488-15-1488-14	City: Anchorage	Address: Dimond Blvd
Start date/time: 8/2/2017	Pipe width: 72	Pipe type: CMP	Surface condition:
Direction: UPSTREAM	Surveyed footage: 263.8	Operator: Brandon Markson	Weather:

Notes: 1488-15 to 1488-14

- 72-in. CMP
- 264 LF
- 1' hole in invert at downstream end
- Various degrees of corrosion between 5:00 and 7:00 position from 0.0 LF to approximately 30 LF
- 1' hole in invert at 29 LF, soil visible
- 6" hole in invert at 30 LF, soil visible
- Visible evidence of poor invert condition
- Spot corrosion, appr. 2-3", in 5:00 position at 130 LF and 6:00 position at 134 LF
- Two 3-4" deflections at approximately 135 LF in 12:00 position
- 3-4" deflection in 11:00 position at approximately 165 LF
- Hole in invert from 152 LF to 154 LF
- Visible corrosion in 5:00 position at 173 LF
- Various discoloration throughout pipe from 5:00 position to 7:00 position
- Flow: 2-3"
- Grade score of: 3



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Main Inspection with Pipe-Run Graph

Project Name:	Mainline ID:	City:	Address:		
Dimond DOT 2017	1488-16 - 1488-15	Anchorage	Dimond Blvd		
Start date/time:	Pipe width:	Pipe height:	Pipe type:	Surface condition:	Weather:
8/3/2017		72	CMP		
Direction:	Surveyed footage:	Operator:	Comments		
Downstream	266.0	Brandon Markson			

Surveyed length: 266.0 ft

1488-16



1488-15

- At 0.0 ft
START WITH FLOW - Start Inspection With the Flow
- At 0.0 ft
AMH - Manhole
1488-16
- At 0.0 ft
MWL - Water Level

Notes: 1488-16 to 1488-15

- 72-in. CMP
- 266 LF
- Varying degrees of intermittent discoloration/corrosion between 5:00 and 7:00 position throughout pipe
- Potential sag at 17 LF
- Potential sag at 65 LF
- Mineralization at joint at 205 LF
- Potential sag at 240 LF
- Flow: 2-4"
- Grade score of: 3

100.0 ft

200.0 ft

- At 266.0 ft
AMH - Manhole
1488-15
- At 266.0 ft
STOP - Inspection stopped

Main Inspection with Pipe-Run Graph

Project Name: Dimond DOT 2017	Mainline ID: 1488-17-1488-16	City: Anchorage	Address: Dimond Blvd
Start date/time: 8/3/2017	Pipe width: 94	Pipe height: 58	Pipe type: CMP
Direction: UPSTREAM	Surveyed footage: 283.9	Operator: Brandon Markson	Comments: Pipe is arched CMP with a concrete bottom

Notes: [1488-17 to 1488-16](#)

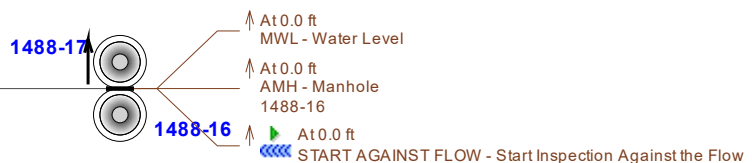
- Arch CMP
- 284 LF
- Discoloration/corrosion at bottom 4-6" of CMP arch
- Intermittent corrosion in pipe wall
- Concrete viewed in camera appears to be in good condition at 38 LF and 236 LF
- Evidence of joint infiltration 47 LF
- Visible joint infiltration at 66 LF, unable to estimate flow rate
- Evidence of joint infiltration/mineralization at 87 LF, 107 LF, 147 LF, 189 LF, 209 LF, 236 LF, 248 LF, 263 LF
- Visible joint infiltration at 127 LF, 168 LF, estimated 1-2 GPM
- CMP arch appears to be offset at joint 263 LF at bottom of arch
- Flow: 1-2"
- Grade score of: 2

 At 283.9 ft
 STOP - Inspection stopped
 At 283.9 ft
 AMH - Manhole
 1488-17

-200.0 ft

-100.0 ft

Surveyed length: 283.9 ft

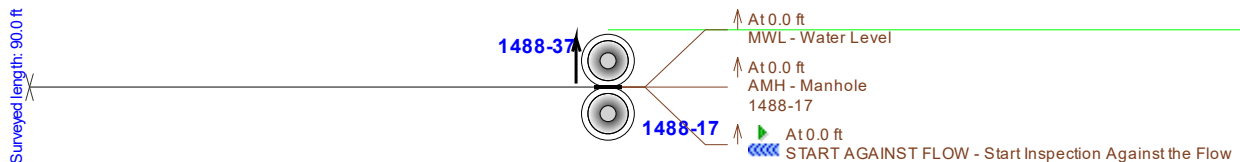
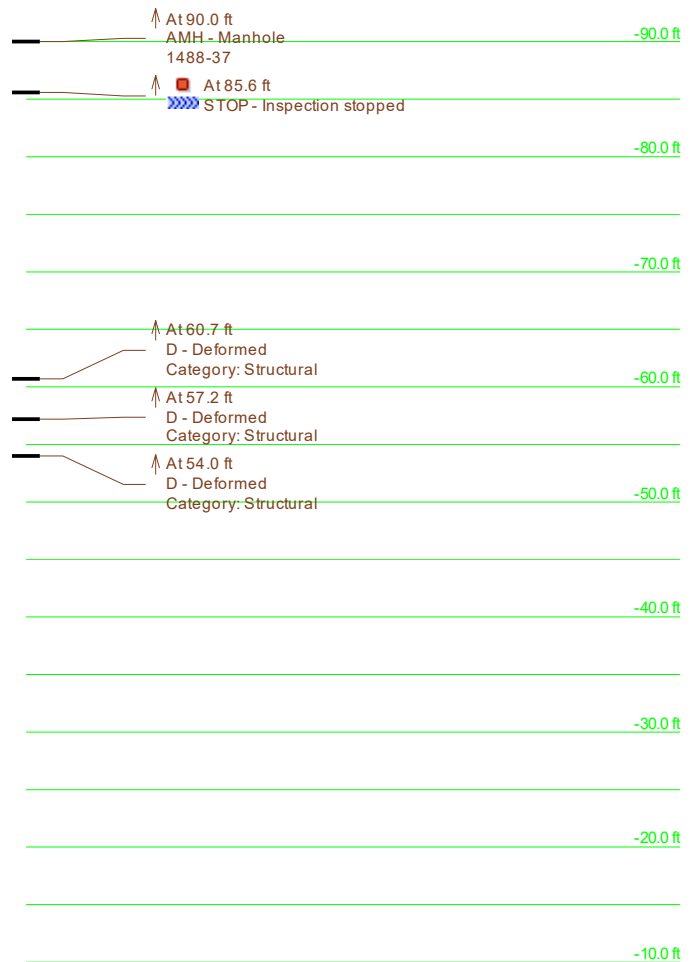


Main Inspection with Pipe-Run Graph

Project Name: Dimond DOT 2017	Mainline ID: 1488-37-1488-17	City: Anchorage	Address: Dimond Blvd
Start date/time: 8/3/2017	Pipe width: 18	Pipe height: 18	Pipe type: CMP
Direction: UPSTREAM	Surveyed footage: 90.0	Operator: Brandon Markson	Comments:

Notes: 1488-37 to 1488-17

- 18-in. CMP
- 90 LF
- Debris increasing in pipe upstream, 0" to approximately 1-2" from 0 LF to 50 LF, debris buildup possible indication of minor grade break
- 1-2" deformations in 10:00/11:00 position at 54 LF, 57 LF, and 61 LF
- Corrosion/Discoloration in 4:00 and 8:00 position from 77 LF to end of pipe, invert obscured with 1-2" debris
- Flow: None
- Grade score of: 1

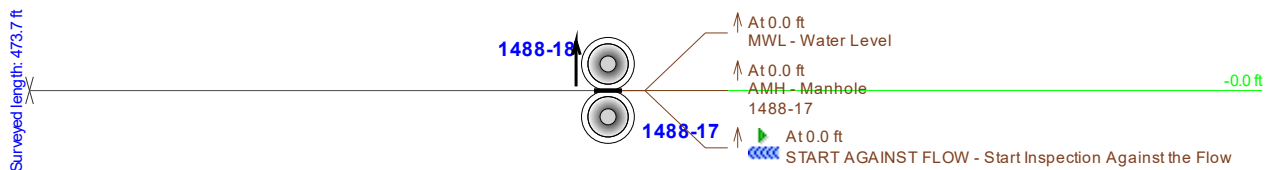
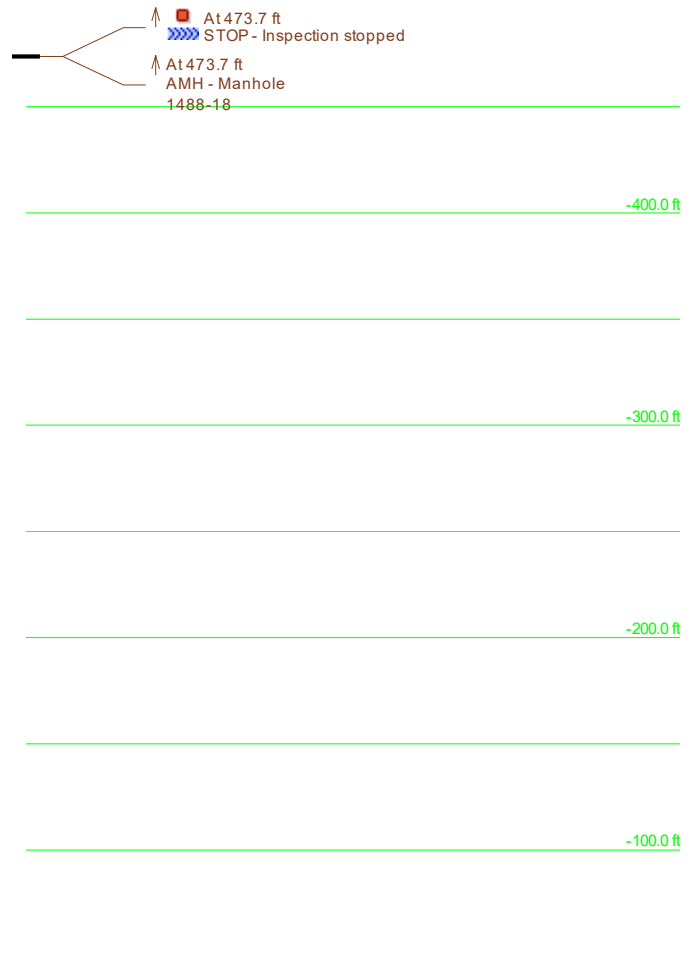


Main Inspection with Pipe-Run Graph

Project Name: Dimond DOT 2017	Mainline ID: 1488-18-1488-17	City: Anchorage	Address: Dimond Blvd
Start date/time: 8/3/2017	Pipe width: 94	Pipe height: 58	Pipe type: CMP
Direction: UPSTREAM	Surveyed footage: 473.7	Operator: Brandon Markson	Comments:

Notes: 1488-18 to 1488-17

- Arch CMP
- 474 LF
- Discoloration/corrosion at bottom 4-6" of CMP arch
- Evidence of minor infiltration/mineralization at joints at 90% of joints
- No major defects observed
- Flow: 2-3"
- Grade score of: 1

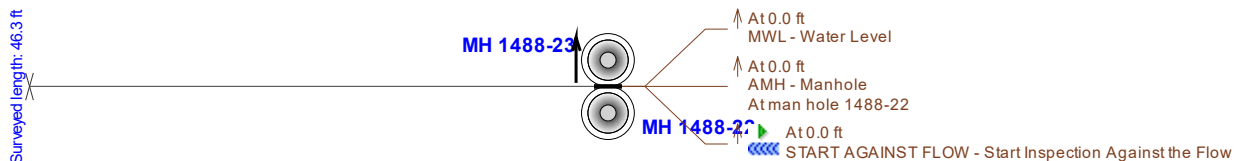
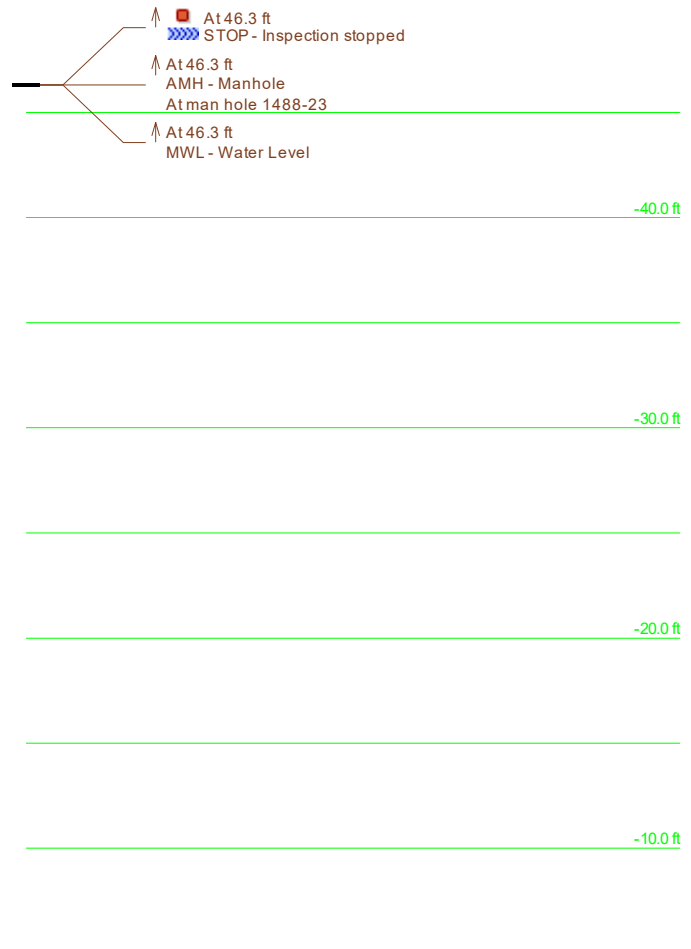


Main Inspection with Pipe-Run Graph

Project Name: NHS Storm Project		Mainline ID: 1488-23 to 1488-22		City: Anchorage	Address: Dimond	
Start date/time: 5/24/2009	Pipe width: 	Pipe height: 12	Pipe type: CMP	Surface condition: 		Weather:
Direction: UPSTREAM	Surveyed footage: 46.3	Operator: Cody England		Comments 		

Notes: 1488-23 to 1488-22

- 12-inch CMP, Fin Drain Pipe
- 46 LF
- 1-2" of debris in pipe from beginning of inspection to 7.2 LF
- 1-2" of debris in pipe from 30 LF to end of inspection
- No serious defects observed
- Flow: None
- Grade score of: 1

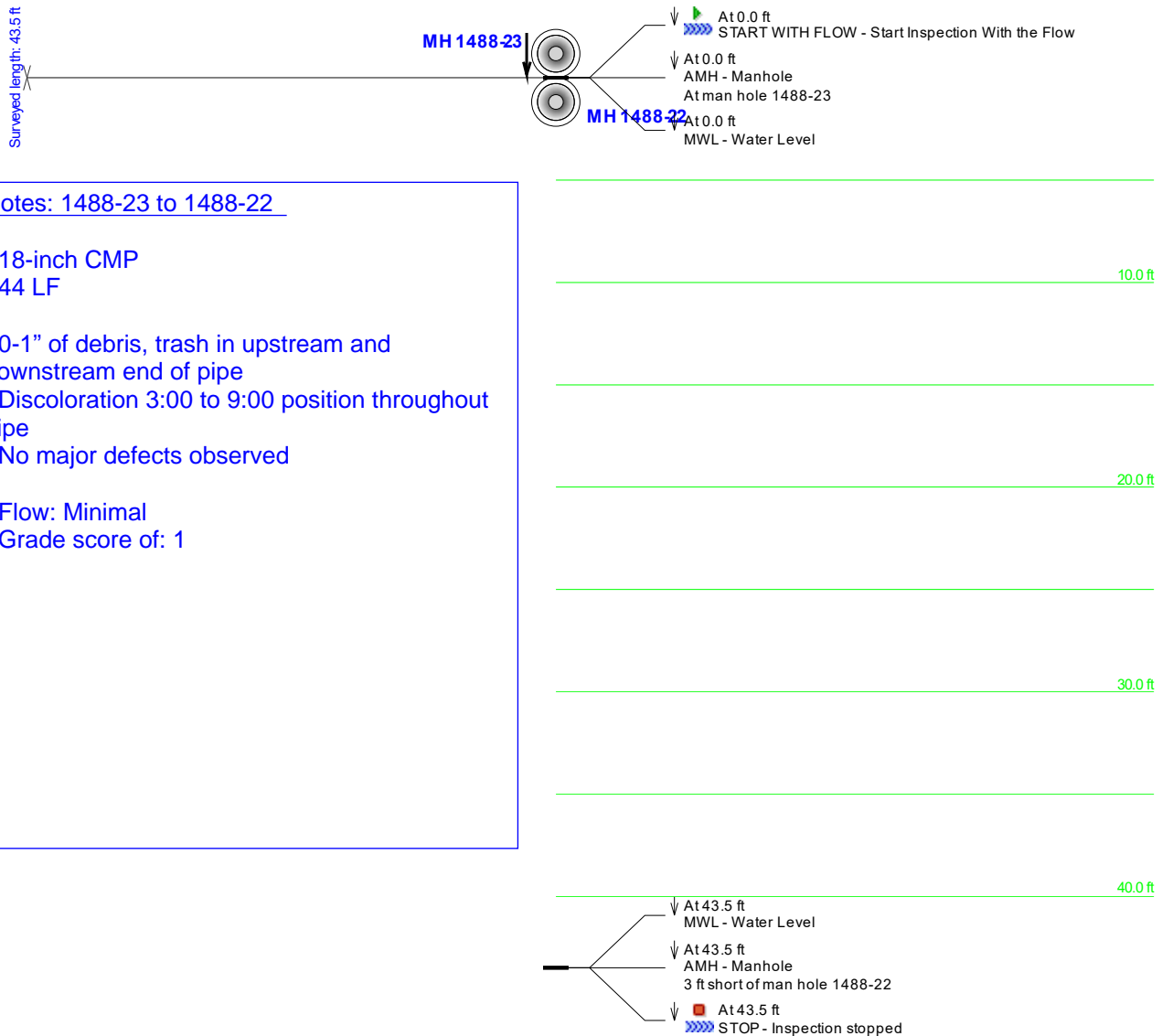


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Main Inspection with Pipe-Run Graph

Project Name: NHS Storm Project	Mainline ID: MH 1488-23 - MH 1488-22	City: Anchorage	Address: Dimond
Start date/time: 5/25/2018	Pipe width: 	Pipe height: 18	Pipe type: CMP
Direction: Downstream	Surveyed footage: 43.5	Operator: Cody England	Comments:



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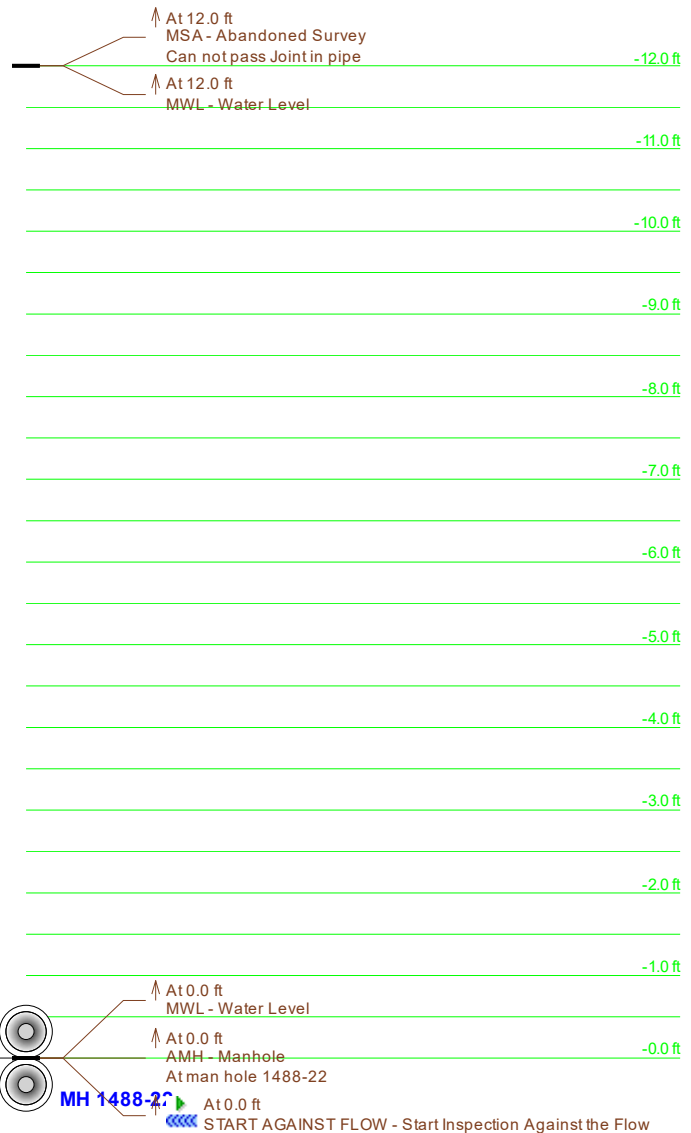


Main Inspection with Pipe-Run Graph

Project Name: NHS Storm Project	Mainline ID: MH 1488-22 - MH 1488-18	City: Anchorage	Address: Dimond
Start date/time: 5/24/2009	Pipe width: 12	Pipe height: 12	Pipe type: CMP
Surface condition:		Weather:	
Direction: UPSTREAM	Surveyed footage: 12.0	Operator: Cody England	Comments:

Notes: 1488-22 to 1488-18

- 12-inch CMP, Fin Drain Pipe
- 52 LF
- 0-1" of debris and discoloration in invert
- Broken pipe end at joint at 12 LF, camera unable to pass
- Camera zoomed to end, debris in downstream end, no structural defects observed
- Flow: None
- Grade score of: 2



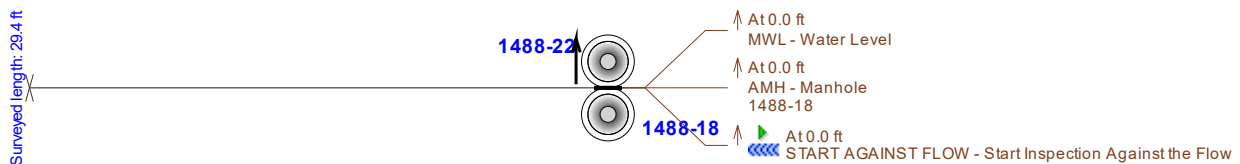
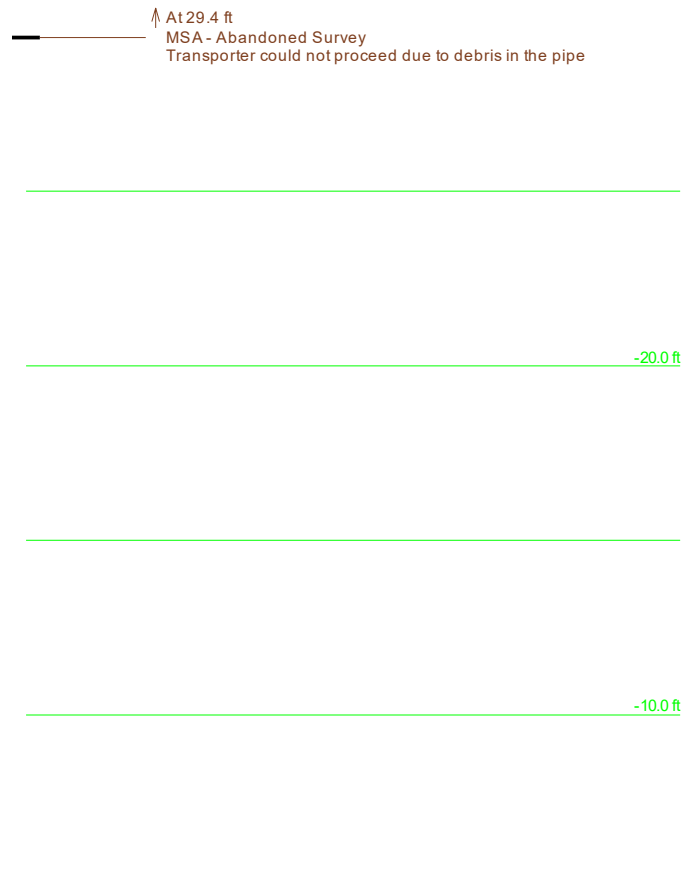
Surveyed length: 12.0 ft

Main Inspection with Pipe-Run Graph

Project Name: Dimond DOT 2017	Mainline ID: 1488-22-1488-18	City: Anchorage	Address: Dimond Blvd
Start date/time: 8/3/2017	Pipe width: 18	Pipe height: 18	Pipe type: CMP
Direction: UPSTREAM	Surveyed footage: 29.4	Operator: Brandon Markson	Comments:

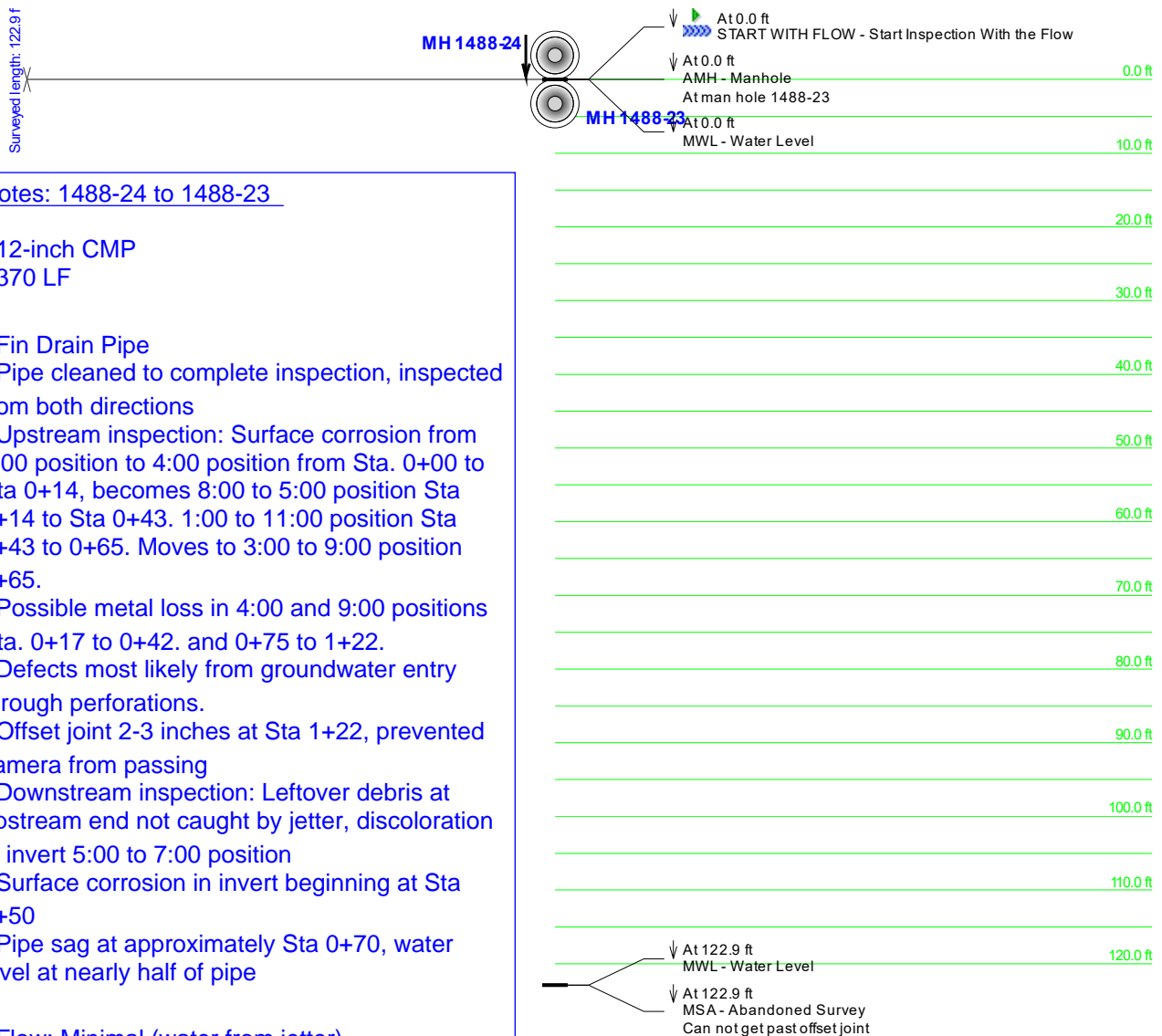
Notes: 1488-22 to 1488-18

- 18 CMP
- 29 LF
- 1-2" of debris 0 LF to 5 LF
- 2-5" of debris 12 LF to 22 LF
- Survey concluded at approximately 29 LF, debris too deep to continue
- Unable to verify condition of invert from inspection footage
- Flow: None
- Grade score of: 1



Main Inspection with Pipe-Run Graph

Project Name: NHS Storm Project		Mainline ID: 1488-24 to 1488-23		City: Anchorage	Address: Dimond	
Start date/time: 5/24/18 & 5/25/18		Pipe width: 12	Pipe height: 12	Pipe type: CMP	Surface condition:	Weather:
Direction: Upstream/Downstream		Surveyed footage: 370		Operator: Cody England		Comments:



Notes: 1488-24 to 1488-23

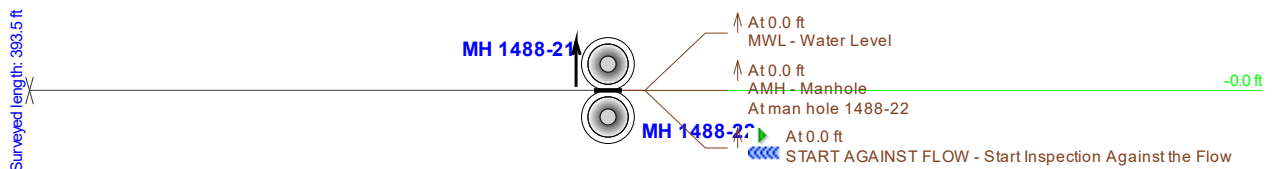
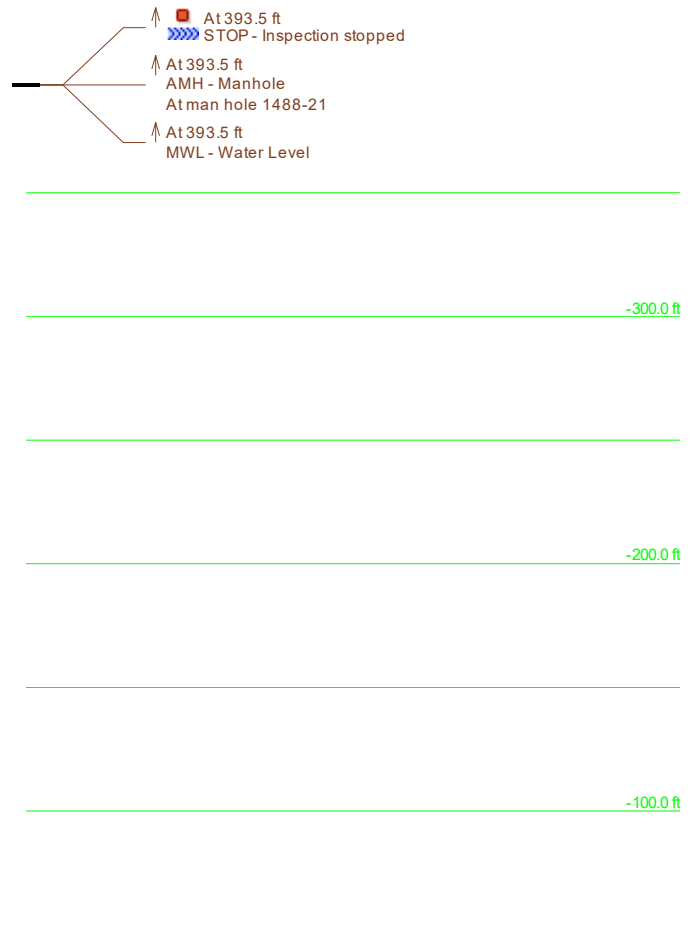
- 12-inch CMP
- 370 LF
- Fin Drain Pipe
- Pipe cleaned to complete inspection, inspected from both directions
- Upstream inspection: Surface corrosion from 9:00 position to 4:00 position from Sta. 0+00 to Sta 0+14, becomes 8:00 to 5:00 position Sta 0+14 to Sta 0+43. 1:00 to 11:00 position Sta 0+43 to 0+65. Moves to 3:00 to 9:00 position 0+65.
- Possible metal loss in 4:00 and 9:00 positions Sta. 0+17 to 0+42. and 0+75 to 1+22.
- Defects most likely from groundwater entry through perforations.
- Offset joint 2-3 inches at Sta 1+22, prevented camera from passing
- Downstream inspection: Leftover debris at upstream end not caught by jetter, discoloration in invert 5:00 to 7:00 position
- Surface corrosion in invert beginning at Sta 0+50
- Pipe sag at approximately Sta 0+70, water level at nearly half of pipe
- Flow: Minimal (water from jetter)
- Grade score of: 3

Main Inspection with Pipe-Run Graph

Project Name: NHS Storm Project		Mainline ID: 1488-21 to 1488-22		City: Anchorage	Address: Dimond	
Start date/time: 5/24/2009	Pipe width: 	Pipe height: 12	Pipe type: CMP	Surface condition: 		Weather:
Direction: UPSTREAM	Surveyed footage: 393.5	Operator: Cody England		Comments 		

Notes: 1488-21 to 1488-22

- 12-inch CMP, Fin Drain Pipe
- 394 LF
- 59.9 LF to approximately 131 LF, debris buildup begins in bottom half of pipe, invert appears sound
- Discoloration throughout pipe
- Debris/Discoloration at joints
- Debris in invert, discoloration in drainage holes 180 LF to 187 LF
- 341 LF, visible corrosion and discoloration in invert, becomes obscured by debris
- 355 LF, pipe deformation in 11:00 position, approximately 1"
- Corrosion at perforations, 2:00 position from 362 LF to end of survey
- 1" deformation at joint, 5:00 position at 363 LF
- No major structural defects observed
- Flow: None
- Grade score of: 2



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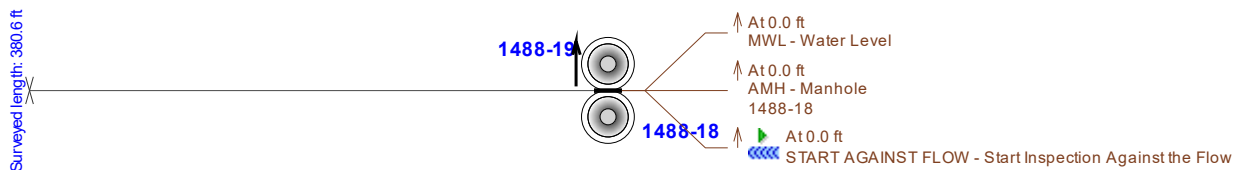
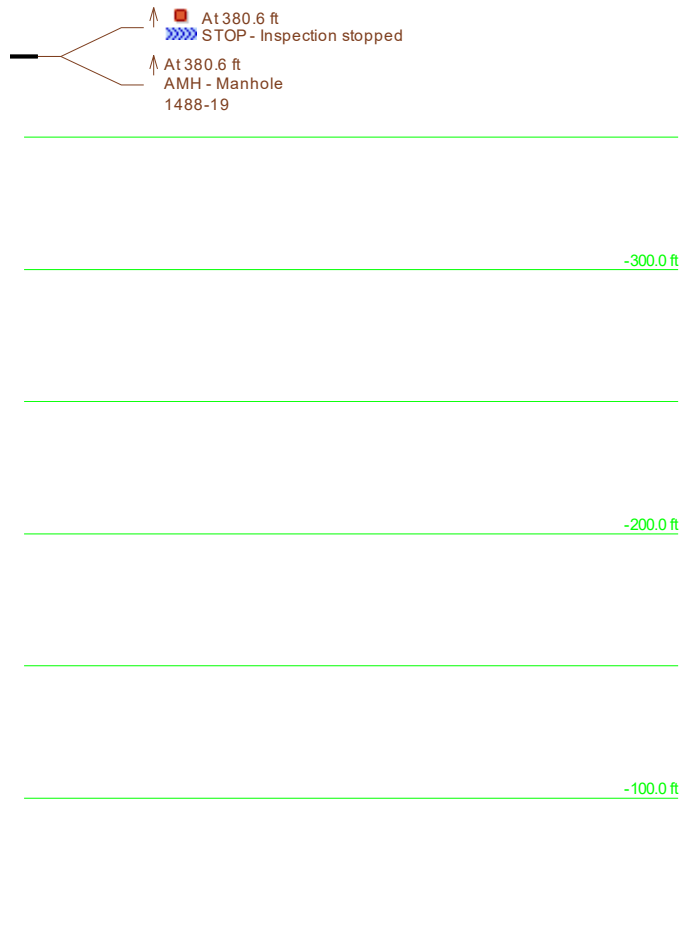


Main Inspection with Pipe-Run Graph

Project Name: Dimond DOT 2017	Mainline ID: 1488-19-1488-18	City: Anchorage	Address: Dimond Blvd
Start date/time: 8/3/2017	Pipe width: 94	Pipe height: 58	Pipe type: CMP
Direction: UPSTREAM	Surveyed footage: 380.6	Operator: Brandon Markson	Comments:

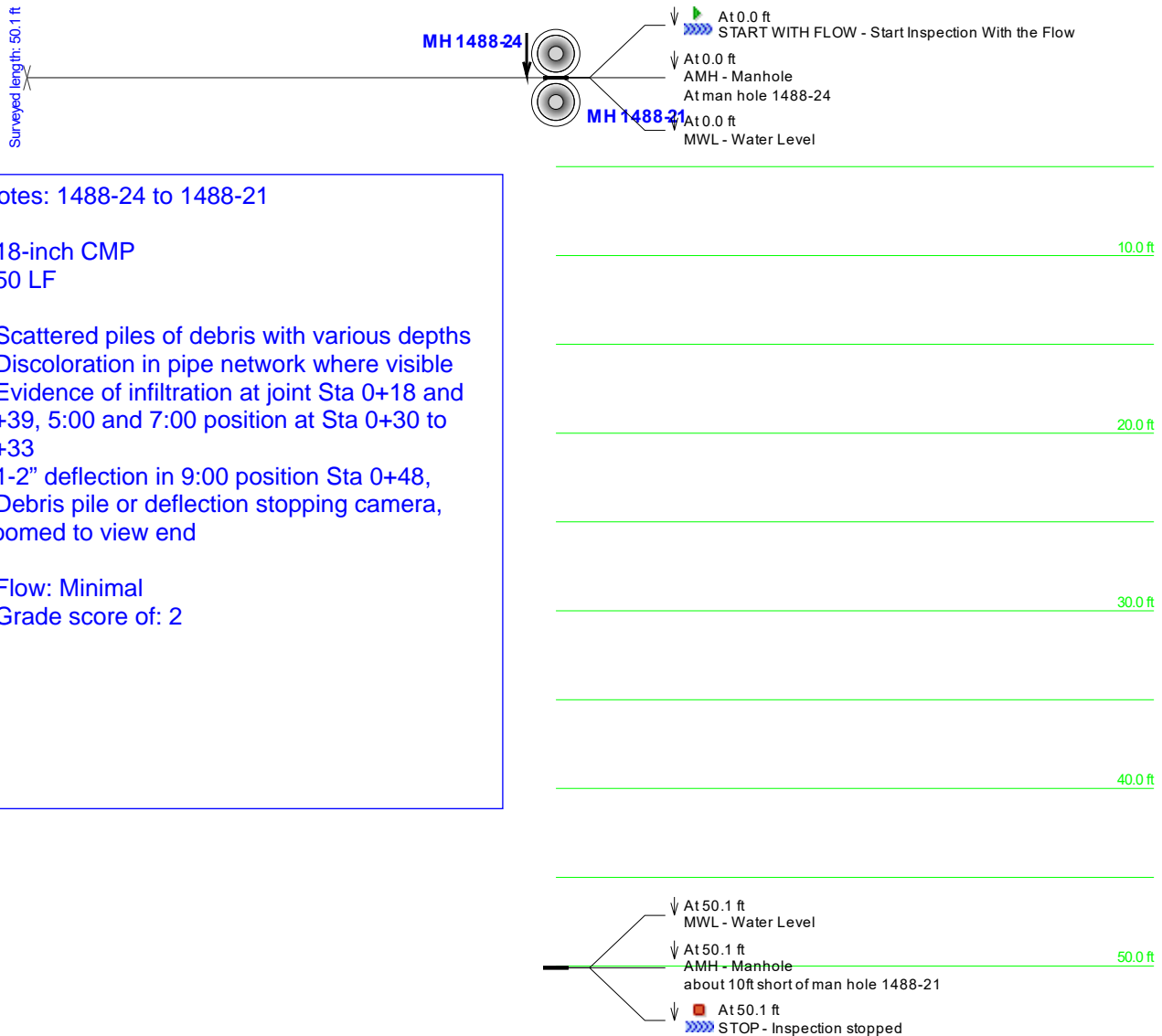
Notes: [1488-19 to 1488-18](#)

- Arch CMP
- 381 LF
- Discoloration/corrosion at bottom 4-6" of CMP arch
- Observed infiltration at joint at 10 LF, mineralization, estimated flow rate 1 GPM
- Evidence of minor infiltration/mineralization at joints at 90% of joints
- No major defects observed
- Flow: 2-3"
- Grade score of: 1



Main Inspection with Pipe-Run Graph

Project Name: NHS Storm Project	Mainline ID: MH 1488-24 - MH 1488-21	City: Anchorage	Address: Dimond
Start date/time: 5/25/2018	Pipe width: 18	Pipe height: 18	Pipe type: CMP
Direction: Downstream	Surveyed footage: 50.1	Operator: Cody England	Comments:



Notes: 1488-24 to 1488-21

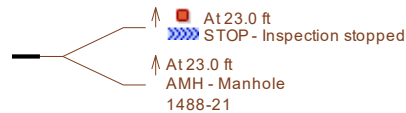
- 18-inch CMP
- 50 LF
- Scattered piles of debris with various depths
- Discoloration in pipe network where visible
- Evidence of infiltration at joint Sta 0+18 and 0+39, 5:00 and 7:00 position at Sta 0+30 to 0+33
- 1-2" deflection in 9:00 position Sta 0+48,
- Debris pile or deflection stopping camera, zoomed to view end
- Flow: Minimal
- Grade score of: 2

Main Inspection with Pipe-Run Graph

Project Name: Dimond DOT 2017	Mainline ID: 1488-21-1488-19	City: Anchorage	Address: Dimond Blvd
Start date/time: 8/3/2017	Pipe width: 18	Pipe height: CMP	Surface condition:
Direction: UPSTREAM	Surveyed footage: 23.0	Operator: Brandon Markson	Weather:

Notes: [1488-21 to 1488-19](#)

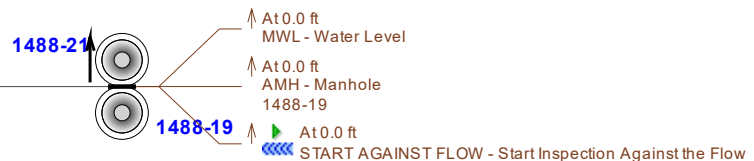
- 18 CMP
- 23 LF
- 1-3" of debris and water
- Unable to verify invert condition
- 0-2" deformation in 8:00 position at 8 LF, discoloration visible at waterline
- Mineralization in 7:00 position at 20 LF
- Flow: 1-2"
- Grade score of:



-20.0 ft

-10.0 ft

Surveyed length: 23.0 ft



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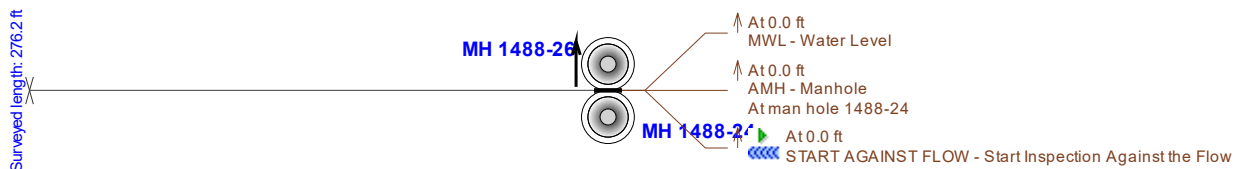
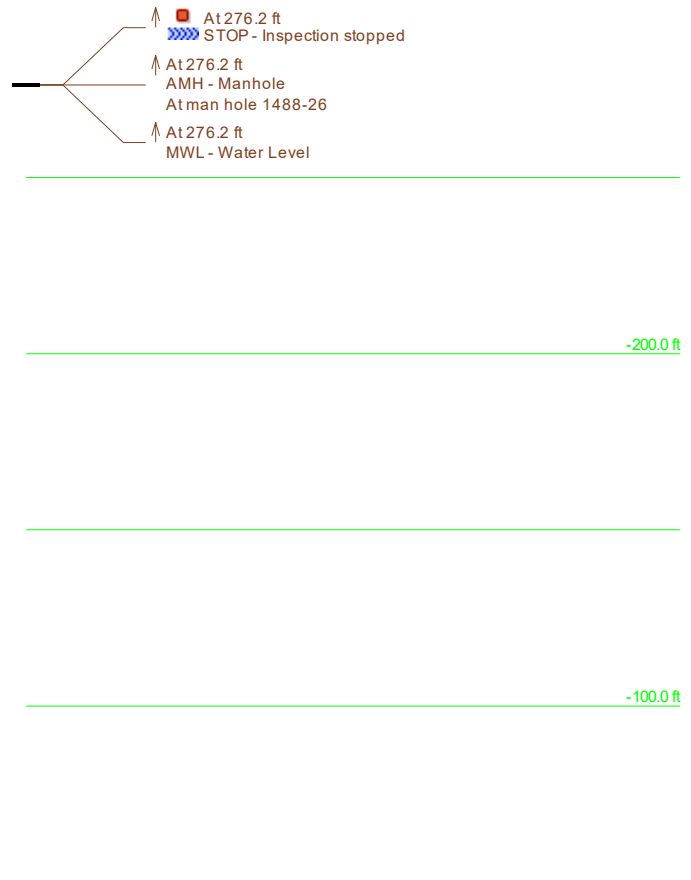


Main Inspection with Pipe-Run Graph

Project Name: NHS Storm Project		Mainline ID: 1488-26 to 1488-24		City: Anchorage		Address: Dimond	
Start date/time: 5/24/2018		Pipe width: 	Pipe height: 12	Pipe type: CMP	Surface condition: 		Weather:
Direction: UPSTREAM		Surveyed footage: 276.2		Operator: Cody England		Comments 	

Notes: 1488-26 to 1488-24

- 12-inch CMP
- 276 LF
- Surface corrosion in 9:00 position from Sta 0+00 to approximately 0+20
- Discoloration in invert where debris is thin
- Roots or organic debris at Sta 0+29, 2+21, 2+46
- Minimal debris in pipe, scattered piles
- No major pipe defects observed
- Flow: None
- Grade score of: 2

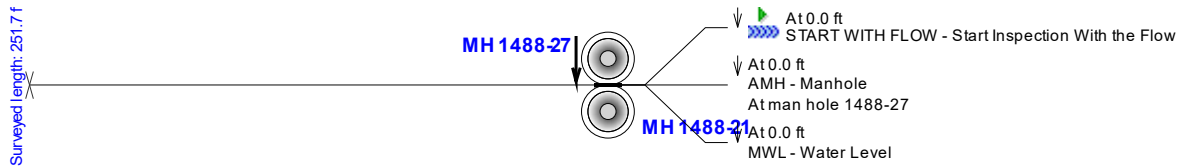


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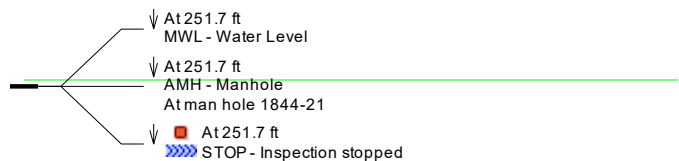
Main Inspection with Pipe-Run Graph

Project Name: NHS Storm Project	Mainline ID: MH 1488-27 - MH 1488-21	City: Anchorage	Address: Dimond
Start date/time: 5/24/2009	Pipe width: 12	Pipe height: CMP	Surface condition:
Direction: Downstream	Surveyed footage: 251.7	Operator: Cody England	Weather:



Notes: 1488-27 to 1488-21

- 12-inch CMP, Fin Drain Pipe
- 252 LF
- Corrosion at joint at 30 LF
- Minimal debris in invert from 30 LF to 60 LF, 65 LF to 77 LF, 86 LF to end of inspection
- Evidence of Corrosion in invert from 106 LF to end of inspection
- Water in pipe at 240 LF to end of inspection
- Cleaning required to determine exact condition of invert
- Flow: None (Water in downstream end)
- Grade score of: 2

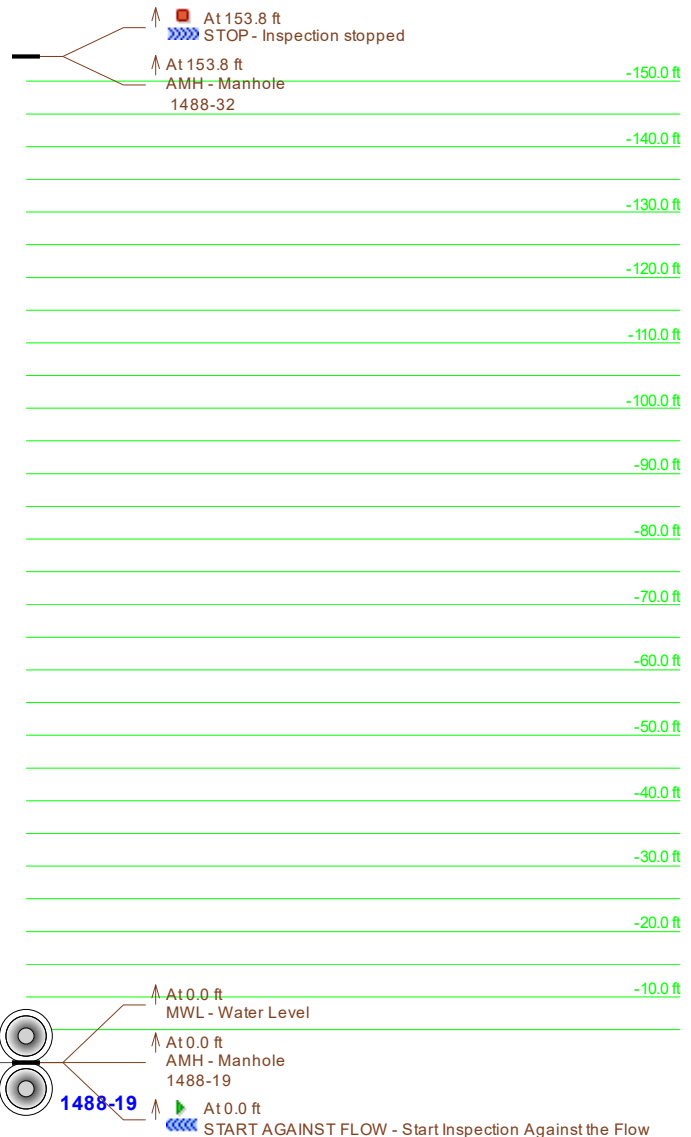


Main Inspection with Pipe-Run Graph

Project Name: Dimond DOT 2017	Mainline ID: 1488-32-1488-19	City: Anchorage	Address: Dimond Blvd
Start date/time: 8/3/2017	Pipe width: 94	Pipe height: 58	Pipe type: CMP
Surface condition:		Weather:	
Direction: UPSTREAM	Surveyed footage: 153.8	Operator: Brandon Markson	Comments:

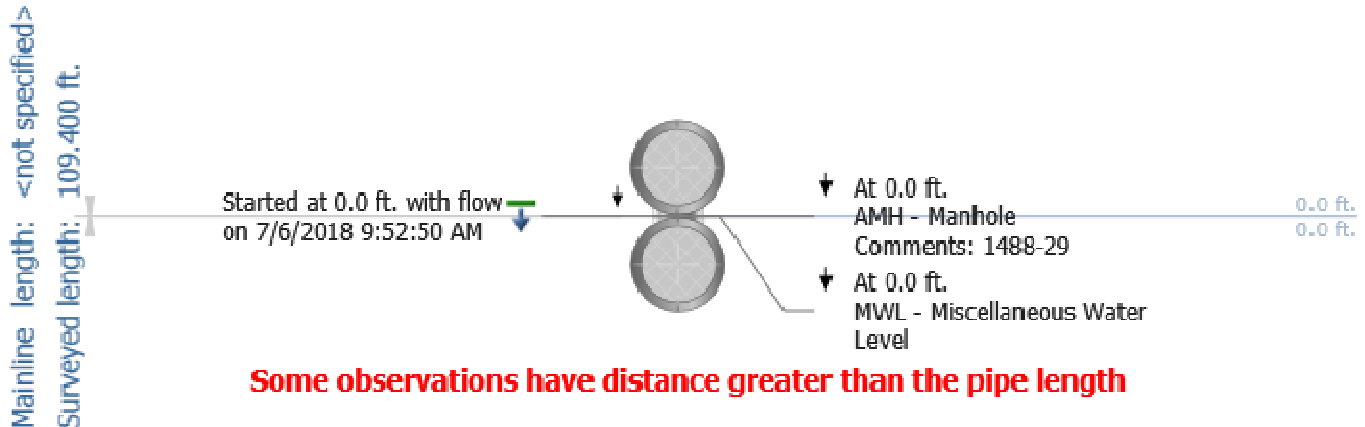
Notes: [1488-32 to 1488-19](#)

- Arch CMP
- 154 LF
- Discoloration/corrosion at bottom 4-6" of CMP arch
- Evidence of minor infiltration/mineralization at joints at 90% of joints
- Spigot end bent at joint 32 LF, soil visible at 10:00 to 12:00 position
- Corrosion in 7:00 to 8:00 position at 86 LF
- Flow: 2-3"
- Grade score of: 2



Main Inspections Pipe Run

Project name: Dimond Blvd. CCTV map 2018	Mainline ID: 1488-29 to 1488-32	City: Anchorage	Street: Dimond Blvd.
Start date/time: 7/6/2018 9:52 AM	Direction: D	Weather:	Location code:
Shape: C	Material: CMP	Height: 64 in.	Width:



Notes: 1488-29 to 1488-32

- 64-inch CMP
- 109 LF
- Downstream inspection
- Mineral buildup at joint 6 LF, 40 LF, 79 LF
- Physically probed upstream invert, evidence of metal loss in invert, condition likely varies throughout pipe.
- No major structural defects observed
- Flow: 3" to 4"
- Grade score of: **2**

CUES, Inc.
 3600 Rio Vista Avenue
 Orlando, FL 32805
 Phone: 407-849-0190
 Fax: 407-425-1569

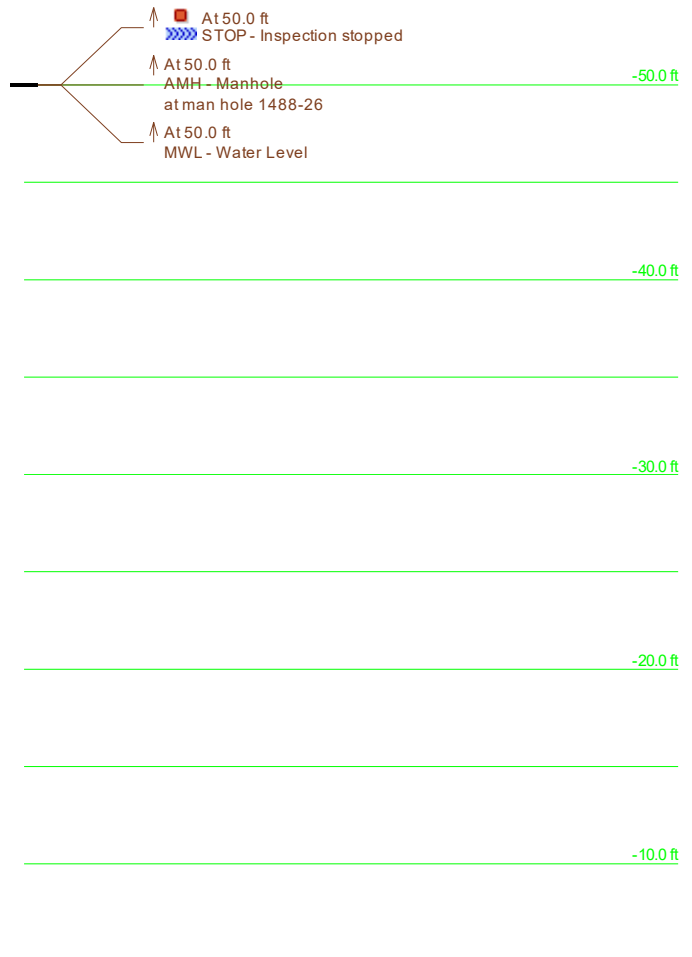


Main Inspection with Pipe-Run Graph

Project Name: NHS Storm Project		Mainline ID: 1488-26 to 1488-27		City: Anchorage		Address: Dimond	
Start date/time: 5/24/2018		Pipe width: 	Pipe height: 12	Pipe type: CMP	Surface condition: 		Weather:
Direction: UPSTREAM		Surveyed footage: 50.0		Operator: Cody England		Comments 	

Notes: 1488-26 to 1488-27

- 12-inch CMP
- 50 LF
- Minimal debris in pipe
- No major defects observed
- Flow: None
- Grade score of: 1



Surveyed length: 50.0 ft

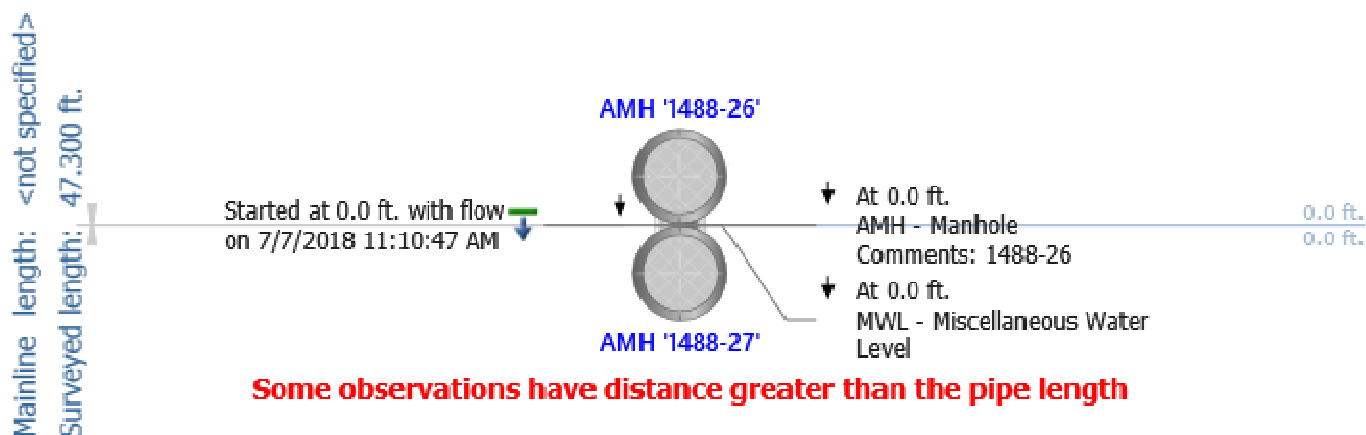
MH 1488-26



- At 0.0 ft MWL - Water Level
- At 0.0 ft AMH - Manhole At man hole 1488-27
- At 0.0 ft START AGAINST FLOW - Start Inspection Against the Flow

Main Inspections Pipe Run

Project name: Dimond Blvd. CCTV map 2018	Mainline ID: 1488-26 - 1488-27	City: Anchorage	Street: Dimond
Start date/time: 7/7/2018 11:10 AM	Direction: D	Weather:	Location code:
Shape: C	Material: CMP	Height: 18 in.	Width:

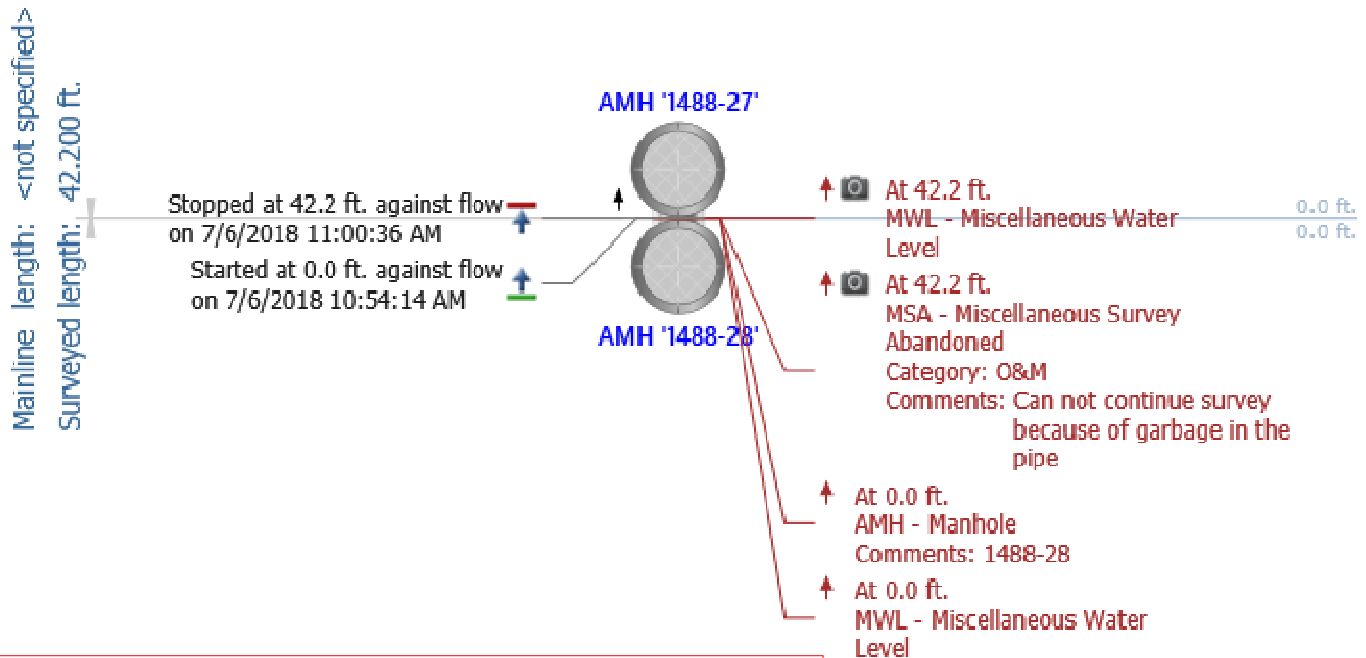


Notes: 1488-26 to 1488-27

- 18-inch CMP
- 47 LF
- 1-2" of debris in pipe
- Surface corrosion visible in invert of downstream end, metal loss in pipe end, pipe requires cleaning to view invert throughout
- Flow: None
- Grade score of: **1**

Main Inspections Pipe Run

Project name:	Mainline ID:	City:	Street:
Dimond Blvd. CCTV map 2018	1488-29 to 1488-27	Anchorage	Dimond
Start date/time:	Direction:	Weather:	Location code:
7/6/2018 10:54 AM	U/D		
Shape:	Material:	Height:	Width:
C	CMP	18 in.	



Notes: 1488-29 to 1488-27

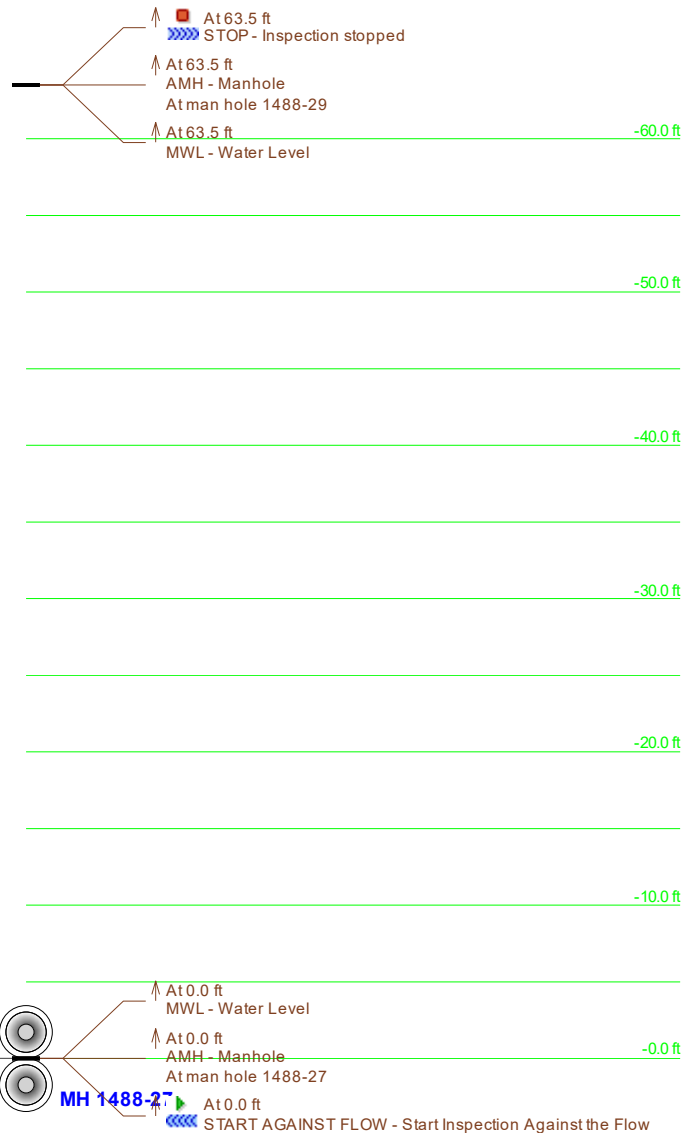
- 18-inch CMP
- 65 LF
- Pipe inspected both upstream and downstream
- Downstream inspection: Discoloration in invert, invert probed, evidence of corrosion
- 0-1" of water beginning at 29 LF to end of survey
- Unknown pipe protruding through pipe at 42 LF in 6:00 position, debris stuck in small pipe
- Garbage and debris through remaining pipe to downstream end
- Upstream inspection: similar debris levels from downstream inspection
- Inspection concluded at 23 feet due to unknown pipe
- Flow: Minimal
- Grade score of: 2

Main Inspection with Pipe-Run Graph

Project Name: NHS Storm Project		Mainline ID: 1488-29 to 1488-27		City: Anchorage		Address: Dimond	
Start date/time: 5/24/2018		Pipe width: 	Pipe height: 12	Pipe type: CMP	Surface condition: 		Weather:
Direction: UPSTREAM		Surveyed footage: 63.5		Operator: Cody England		Comments 	

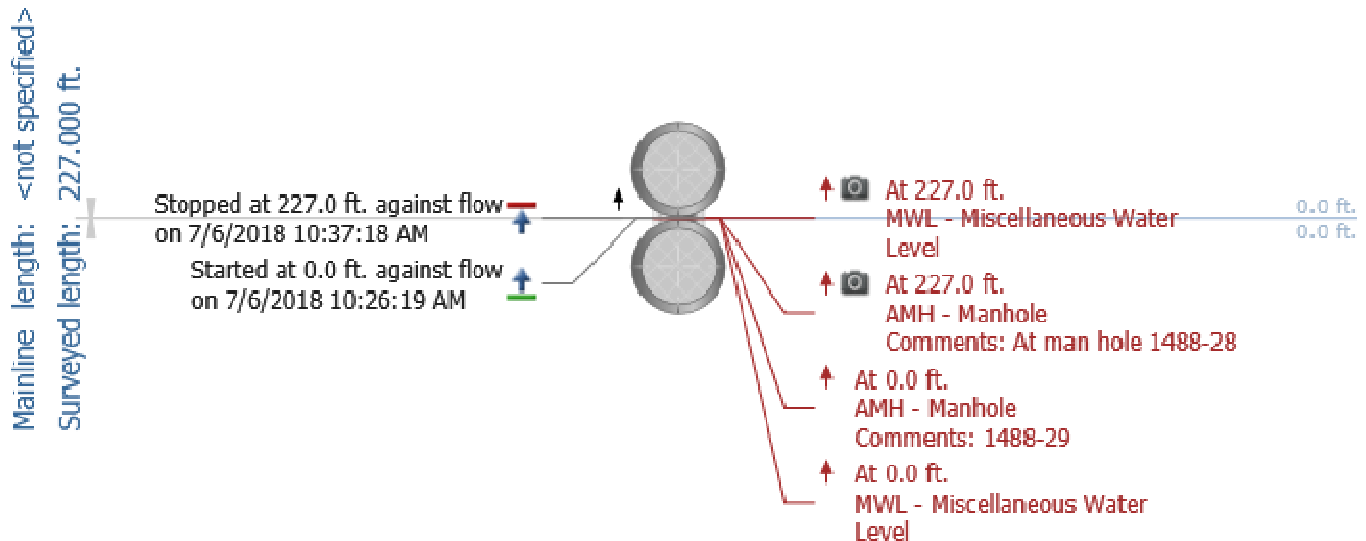
Notes: 1488-29 to 1488-27

- 12-inch CMP
- 64 LF
- Minimal debris in pipe
- No major defects observed
- Flow: None
- Grade score of: 1



Main Inspections Pipe Run

Project name: Dimond Blvd. CCTV map 2018	Mainline ID: 1488-28 to 1488-29	City: Anchorage	Street: Dimond
Start date/time: 7/6/2018 10:26 AM	Direction: U	Weather:	Location code:
Shape: C	Material: CMP	Height: 64"	Width:

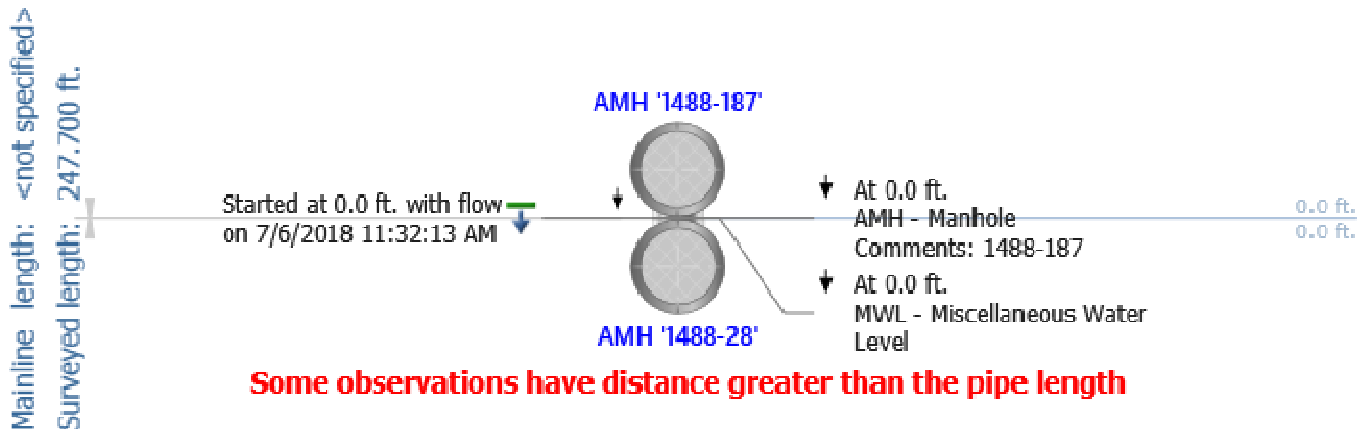


Notes: 1488-28 to 1488-29

- 64-inch CMP
- 227 LF
- Upstream inspection
- Partially crushed pipe end at joint at 15 LF, 1-3" deformation, joint separated from 9:00 position to 3:00 position 1-2"
- Joint deflection, 1-2" in pipe crown at 45 LF, 76 LF, 106 LF, 136 LF, 166 LF
- Mineral buildup at joints
- Physically probed upstream invert, evidence of metal loss in invert, condition likely varies throughout pipe.
- Possible ovality in pipe at approximately 60 LF, camera unable to provide on-center reference point due to pipe size
- Flow: 3" to 4"
- Grade score of: **2**

Main Inspections Pipe Run

Project name:	Mainline ID:	City:	Street:
Dimond Blvd. CCTV map 2018	1488-187 - 1488-28	Anchorage	Dimond
Start date/time:	Direction:	Weather:	Location code:
7/6/2018 11:32 AM	D		
Shape:	Material:	Height:	Width:
C	CMP	64 in.	

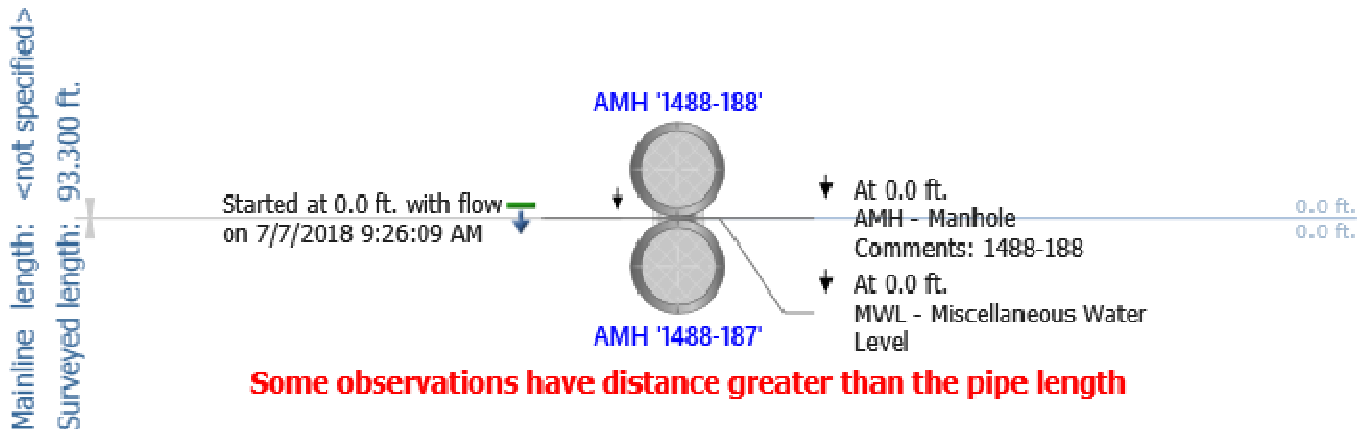


Notes: 1488-187 to 1488-28

- 64-inch CMP
- 248 LF
- Discoloration in invert, evidence of corrosion and metal loss - Mineralization at joint 26 LF
- Corrosion and 1-2" separation at joint 26 LF
- Mineralization and separation at joint at 58 LF, 87 LF, 117 LF, 147 LF, 178 LF
- Mineralization at join 209 LF
- Flow: 2-3"
- Grade score of: **2**

Main Inspections Pipe Run

Project name:	Mainline ID:	City:	Street:
Dimond Blvd. CCTV map 2018	1488-188 - 1488-187	Anchorage	Dimond
Start date/time:	Direction:	Weather:	Location code:
7/7/2018 9:26 AM	D		
Shape:	Material:	Height:	Width:
C	CMP	18 in.	

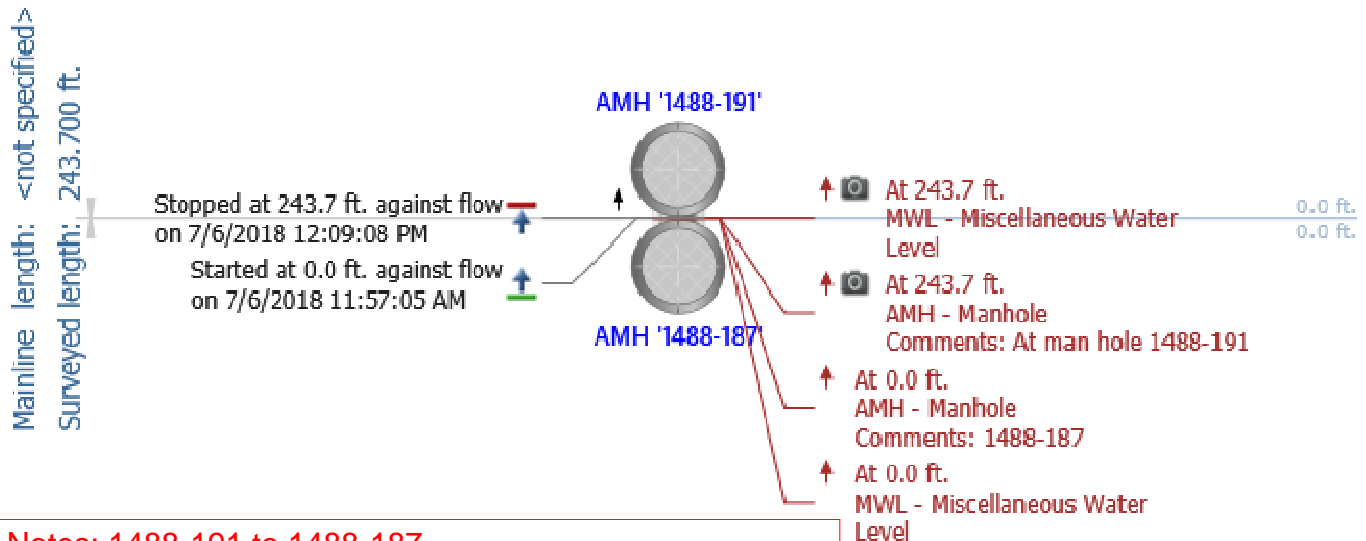


Notes: 1488-188 to 1488-187

- 18-inch CMP
- 93 LF
- 1-2" debris buildup at upstream end
- Minor surface corrosion in invert
- Organic debris at joint at 43 LF
- Debris buildup at 68 LF, possible pipe belly
- 1" pipe deflection in 11:00 position at 69 LF
- Flow: None
- Grade score of: 1

Main Inspections Pipe Run

Project name:	Mainline ID:	City:	Street:
Dimond Blvd. CCTV map 2018	1488-191 to 1488-187	Anchorage	Dimond
Start date/time:	Direction:	Weather:	Location code:
7/6/2018 11:57 AM	U		
Shape:	Material:	Height:	Width:
C	CMP	64 in.	

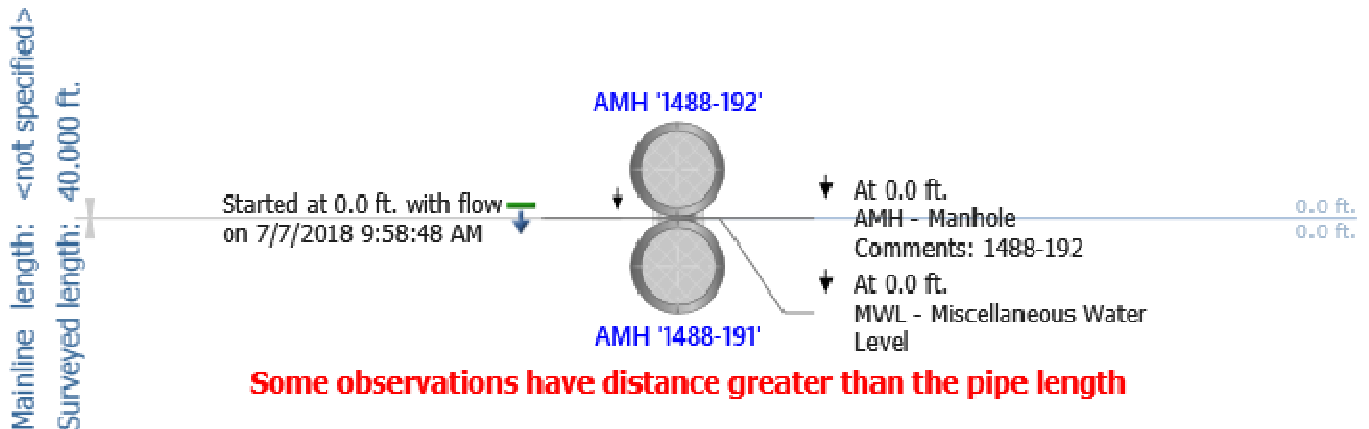


Notes: 1488-191 to 1488-187

- 64-inch CMP
- 244 LF
- Discoloration in bottom of pipe, evidence of corrosion in invert
- Corrosion spots at 8:00 position from 4 LF to 30 LF, some spots appear to have pitting
- Mineralization at joint 32 LF, 63 LF
- Pin holes around joint at 63 LF
- Service connection in 2:00 position at 125 LF, causing corrosion in mainline pipe wall below
- 1-2" deformation in bottom of pipe at joint 152 LF, corrosion pinholes surrounding joint and mineralization
- Mineralization, corrosion, separation at joint at 184 LF
- Debris on thaw line cable at downstream end
- Flow: 2" to 3"
- Grade score of: **3**

Main Inspections Pipe Run

Project name:	Mainline ID:	City:	Street:
Dimond Blvd. CCTV map 2018	1488-192 - 1488-191	Anchorage	Dimond
Start date/time:	Direction:	Weather:	Location code:
7/7/2018 9:58 AM	D		
Shape:	Material:	Height:	Width:
C	CMP	18 in.	

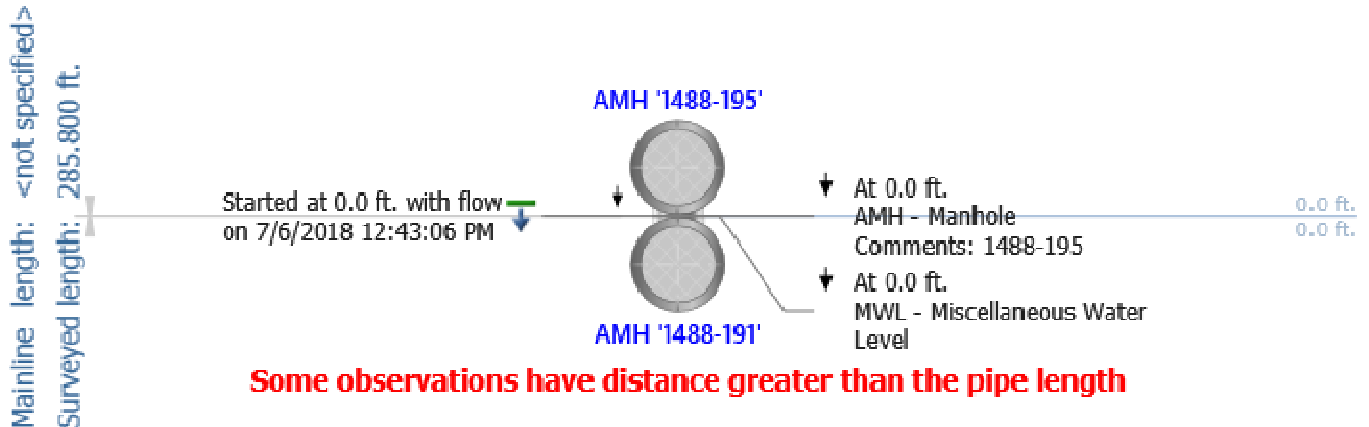


Notes: 1488-192 to 1488-191

- 18-inch CMP
- 107 LF
- 1" of water/debris in invert, unable to determine invert condition, increases downstream, pipe approximately half full of debris at 40 LF
- Clean pipe to complete inspection and verify invert condition
- Flow: Minimal
- Grade score of: **1**

Main Inspections Pipe Run

Project name:	Mainline ID:	City:	Street:
Dimond Blvd. CCTV map 2018	1488-195 - 1588-191	Anchorage	Dimond
Start date/time:	Direction:	Weather:	Location code:
7/6/2018 12:43 PM	D		
Shape:	Material:	Height:	Width:
C	CMP	64 in.	

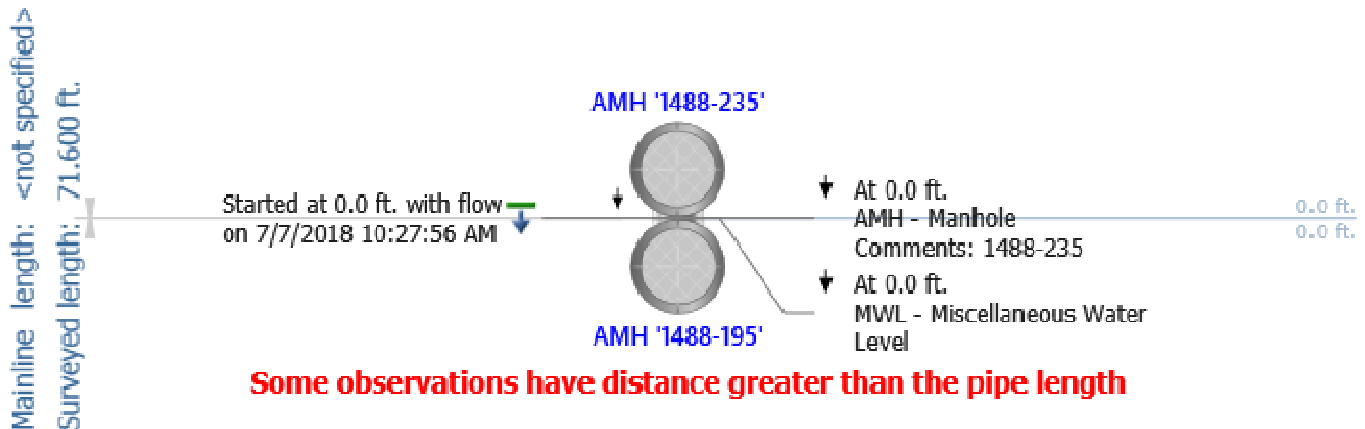


Notes: 1488-195 to 1488-191

- 64-inch CMP
- 286 LF
- Corrosion pinholes and discoloration in 5:00 and 7:00 position throughout pipe
- Mineralization at joint 27 LF, 87 LF, 149 LF, 179 LF, 239 LF, 269 LF
- 3-4" deformation at joint at 58 LF in 1:00 position
- Joints in 64" pipe typically separated
- Invert condition most likely typical of pipes in area, corrosion and metal loss expected
- Flow: 2"-3"
- Grade score of: 3

Main Inspections Pipe Run

Project name:	Mainline ID:	City:	Street:
Dimond Blvd. CCTV map 2018	1488-235 - 1488-195	Anchorage	Dimond
Start date/time:	Direction:	Weather:	Location code:
7/7/2018 10:27 AM	D		
Shape:	Material:	Height:	Width:
C	CMP	18 in.	

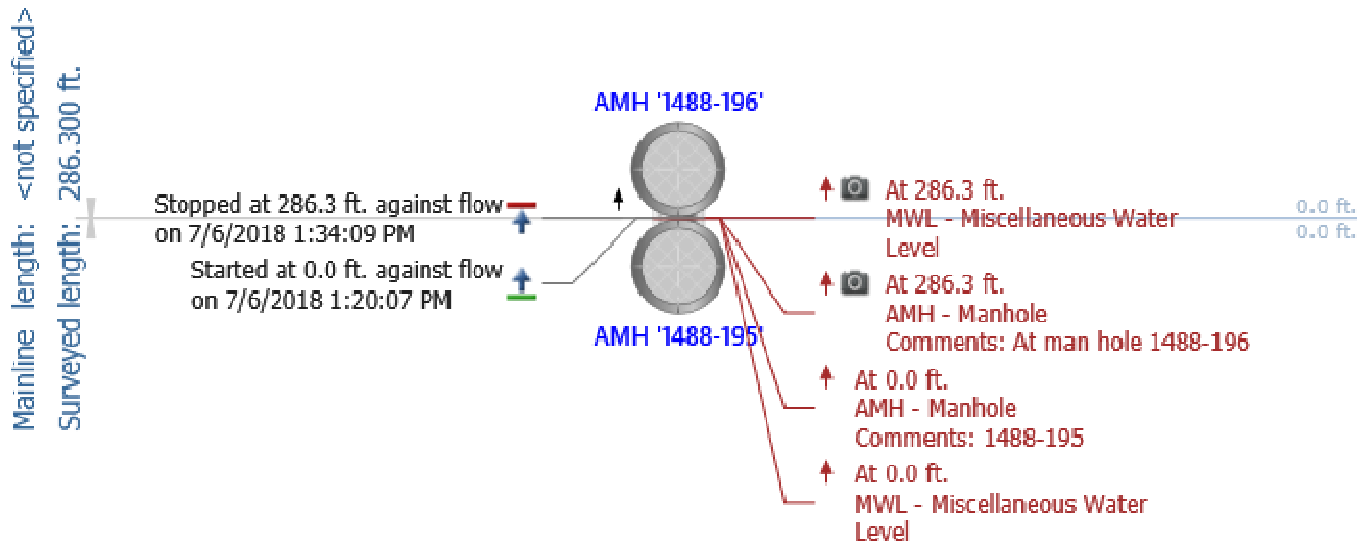


Notes: 1488-235 to 1488-195

- 18-inch CMP
- 129 LF
- Varying levels of debris in pipe, increases to approximately 1/4 pipe toward 30 LF then decreases to 0-1", large pieces of garbage/debris in upstream end, debris increasing from 59 LF to end of survey to approximately half full
- 1-2" deformation in 9:00 position, 20 LF
- 1" deformation in 12:00 position, 28 LF
- 1" deformation in 3:00 position, 47 LF
- Evidence of surface corrosion in invert at 53 LF
- No structural defects observed
- Flow: None
- Grade score of: 1

Main Inspections Pipe Run

Project name:	Mainline ID:	City:	Street:
Dimond Blvd. CCTV map 2018	1488-196 to 1488-195	Anchorage	Dimond
Start date/time:	Direction:	Weather:	Location code:
7/6/2018 1:20 PM	U		
Shape:	Material:	Height:	Width:
C	CMP	64 in.	

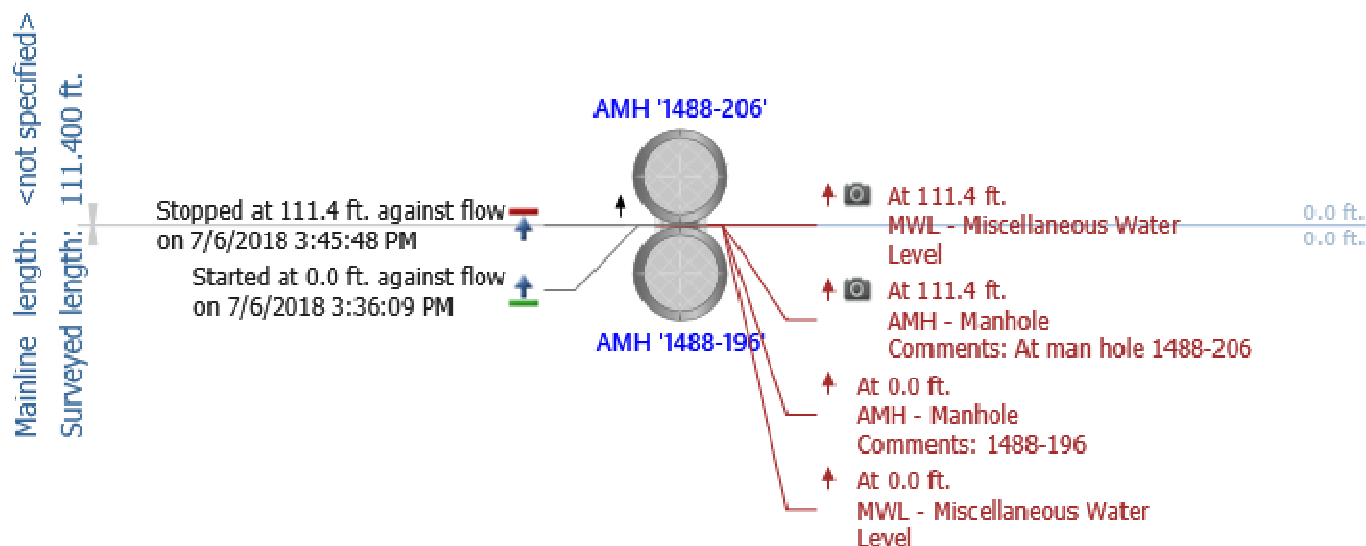


Notes: 1488-196 to 1488-195

- 64-inch CMP
- 286 LF
- Pinholes 4:00 and 8:00 position throughout pipe
- Mineralization at joint 25 LF, corrosion at 55 LF, 76 LF, 140 LF, 161 LF, 181 LF, 200 LF, 211 LF,
- Bent piece of joint showing at 161 LF
- Possible belly at downstream end, does not appear to be limiting flow
- Invert condition most likely typical of pipes in area, corrosion and metal loss expected
- Flow: 2" to 3"
- Grade score of: **3**

Main Inspections Pipe Run

Project name:	Mainline ID:	City:	Street:
Dimond Blvd. CCTV map 2018	1488-206 to 1488-196	Anchorage	Dimond
Start date/time:	Direction:	Weather:	Location code:
7/6/2018 3:36 PM	U		
Shape:	Material:	Height:	Width:
C	CMP	24 in.	

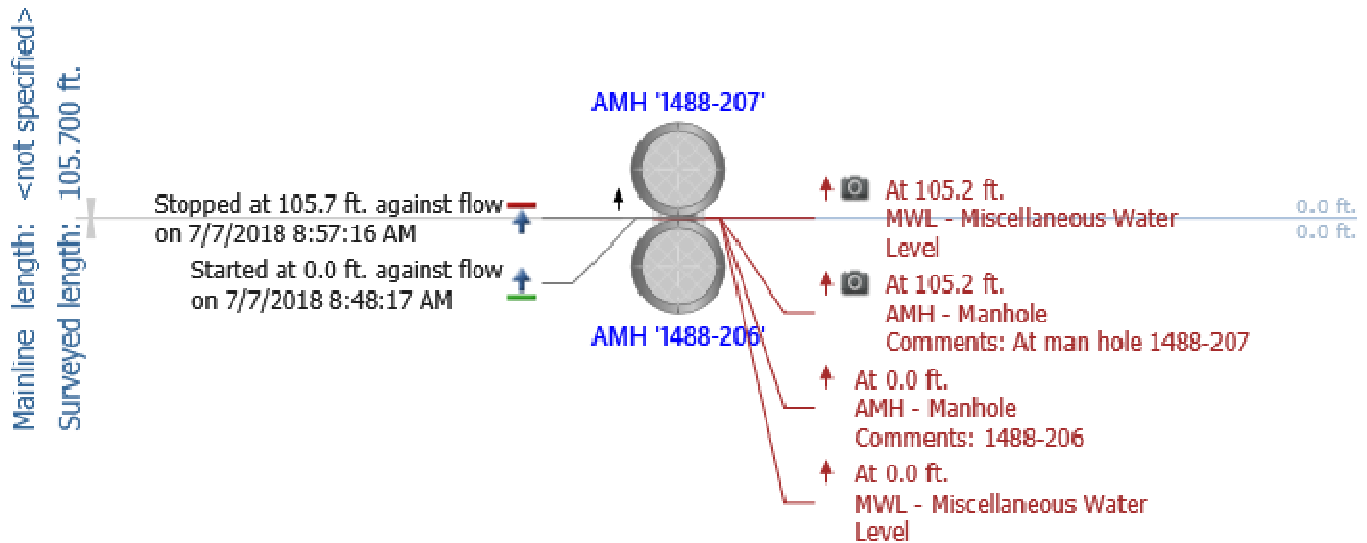


Notes: 1488-206 to 1488-196

- 24-inch CMP
- 111 LF
- Discoloration in pipe bottom, possible corrosion in invert
- Varying debris in invert
- Possible belly in pipe at 30 LF
- Mineralization at joint at 33 LF, 53 LF, 91 LF
- Debris and water increase at 65 LF to end of pipe
- Flow: 1" to 2"
- Grade score of: **2**

Main Inspections Pipe Run

Project name:	Mainline ID:	City:	Street:
Dimond Blvd. CCTV map 2018	1488-207 to 1488-206	Anchorage	Dimond
Start date/time:	Direction:	Weather:	Location code:
7/7/2018 8:48 AM	U		
Shape:	Material:	Height:	Width:
C	CMP	24 in.	

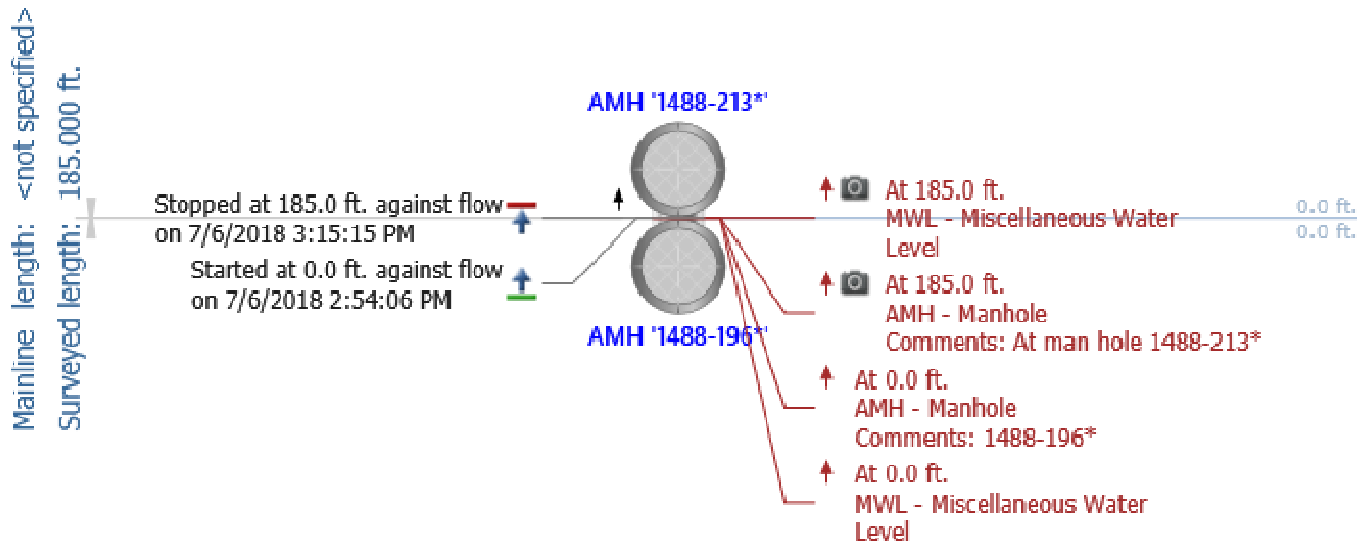


Notes: 1488-207 to 1488-206

- 24-inch CMP
- 105 LF
- 1"-2" of debris
- Discoloration in invert
- Possible belly at downstream end
- Visible infiltration at joint at 19 LF
- Evidence of infiltration at joint at 40 LF, 80 LF
- Flow: 1"-2"
- Grade score of: 2

Main Inspections Pipe Run

Project name:	Mainline ID:	City:	Street:
Dimond Blvd. CCTV map 2018	1488-213 to 1488-196	Anchorage	Dimond
Start date/time:	Direction:	Weather:	Location code:
7/6/2018 2:54 PM	U		
Shape:	Material:	Height:	Width:
C	CMP	24 in.	

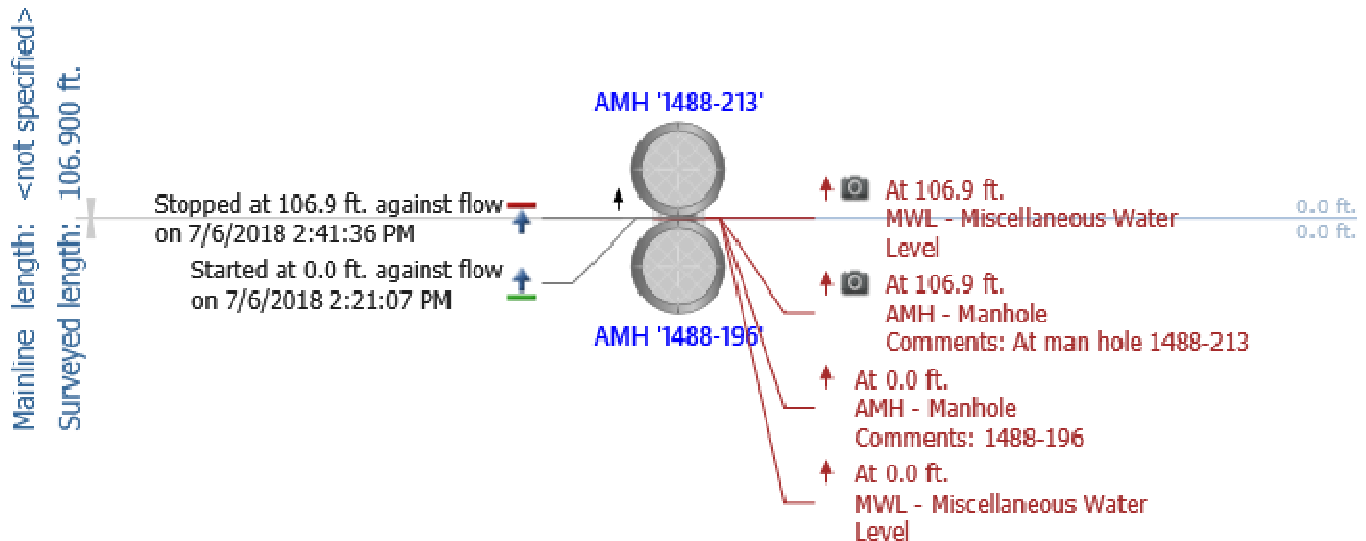


Notes: 1488-213 to 1488-196

- 24-inch CMP
- 185 LF
- Discoloration in bottom of pipe, evidence of corrosion in invert
- Various piles of debris
- Flared piece of joint at 73 LF
- Pipe appears oval at midspan
- Mineralization at joint at 93 LF, 104 LF, 124 LF, 144 LF
- rubber gasket exposed in pipe crown, 165 LF
- Corrosion pitting at 96 LF in 8:00 position
- Infiltration in 5:00 position pinhole 108 LF
- Pinholes w/ infiltration 111 LF 9:00 position
- Possible pipe belly at 124 LF
- Pinhole at 143 LF w/ infiltration in 1:00 position
- Pinholes w/ infiltration at 163 LF in 5:00 position
- Flow: 1" to 2"
- Grade score of: **3**

Main Inspections Pipe Run

Project name:	Mainline ID:	City:	Street:
Dimond Blvd. CCTV map 2018	1488-213A to 1488-196	Anchorage	Dimond
Start date/time:	Direction:	Weather:	Location code:
7/6/2018 2:21 PM	U		
Shape:	Material:	Height:	Width:
C	CMP	28 in.	



Notes: 1488-213A to 1488-196

- 28-inch CMP
- 107 LF
- Discoloration in bottom of pipe
- 0-1" of debris in invert, discoloration and surface corrosion also in invert
- Mineralization at joint at 19 LF, 33 LF, 48 LF, 53 LF, 73 LF
- Horizontal deflection at 29 LF to the right, to the left at 73 LF, left at 93 LF
- Flow: 1"
- Grade score of: 2

Storm Drain Structure Summary and Inspection Reports

CR NHS Storm Drain Condition Report
PROJECT NO. 0A310554 / Z591280000

Page # in Appendix A	NHS Storm Drain Structure Conditions Dimond Blvd. (Jewel Lake to Old Seward)						Defect Grades: 0=No Defect, 1=Minor Defect, 2=Minor to Moderate Defect, 3=Moderate Defect, 4=Significant Defect, 5=Most Significant Defect								2017 Inspections	
	2018 Inspections															
	Condition of Components															
Structure No.	Rim-Invert (in.)	Material	Overall	Cover	Frame	Chimney	Steps	Cone	Reducing Slab	Barrel	Base	Connections (Influent)	Connections (Effluent)	Storm Drain Structure Observations		
1	1492-25	177	Pre-cast Concrete	2	1	1	3	1	1	N/A	1	1	1	2	1st Grade Ring Broken, Aggregate exposed in 2nd Grade Ring	
	1492-23	135	Pre-cast Concrete	1	1	1	1	1	1	N/A	1	1	1	1		
	1492-21	137	Pre-cast Concrete	1	1	1	1	1	N/A	1	1	1	1	1		
	1492-20	115	Pre-cast Concrete	1	1	1	1	1	1	N/A	1	1	1	1		
	1492-20A	N/A	CMP flared end culvert	1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1	Pipe inlet in ditch	
2	1492-17	148	Pre-cast Concrete	1	1	1	1	1	1	N/A	1	1	2	2		
	1492-17A	161	Pre-cast Concrete	2	1	1	2	1	2	N/A	2	1	1	1		
	1492-3	139	Pre-cast Concrete	1	1	1	2	1	1	N/A	1	1	2	N/A	OGS, too deep to inspect structure components from surface, QV results showed cracks in chimney, overall good quality to concrete, effluent pipe connection not visible	
	1492-4	107	Pre-cast Concrete	1	1	1	1	1	2	N/A	1	1	1	1	Base nearly submerged, concrete visible appeared in good condition	
	1492-5	79	Pre-cast Concrete	3	1	1	2	1	1	N/A	1	N/A	3	2	Base submerged, cracked chimneys and grout	
3	585-50	62	Pre-cast Concrete	1	1	1	2	1	1	N/A	N/A	1	2	2		
4	585-36	103	Pre-cast Concrete	1	1	1	3	1	1	N/A	1	1	3	1		
	585-15	100	Pre-cast Concrete	1	1	1	2	1	N/A	1	1	1	2	2		
	585-14	87	Pre-cast Concrete	3	1	1	4	1	1	N/A	1	3	3	3	Pieces of chimney broken and missing, grout broken and missing, circumferential crack in base	
	585-12	N/A	Pre-cast Concrete	2	N/A	N/A	N/A	1	N/A	N/A	N/A	N/A	N/A	N/A	Structure not yet inspected	
	585-11	85	Pre-cast Concrete	1	1	1	2	1	1	N/A	1	1	1	1	Base submerged, influent pipe from parking lot drainage	
	585-6	116	Pre-cast Concrete	2	1	1	3	1	1	N/A	1	1	1	1		
	585-5	96	Pre-cast Concrete	1	1	1	1	1	1	N/A	1	1	1	1		
	585-3	99	Pre-cast Concrete	1	1	1	1	1	1	N/A	1	1	1	1		
	585-72	80	Pre-cast Concrete	1	1	1	2	1	1	N/A	N/A	1	1	1		
5	17-6	88	Pre-cast Concrete	1	1	1	N/A	1	1	N/A	1	1	1	1		
	17-13	92	Pre-cast Concrete	1	1	1	1	1	1	N/A	N/A	1	N/A	N/A	Grout scores missing, 3 Chimneys 6" each	
	17-17A	40	Pre-cast Concrete	1	1	1	N/A	1	N/A	1	N/A	2	3	3	Crack in base from 12:00 to 2:00 position	

CR NHS Storm Drain Condition Report
PROJECT NO. 0A310554 / Z591280000

Page # in Appendix A	NHS Storm Drain Structure Conditions Dimond Blvd. (Jewel Lake to Old Seward)						Defect Grades: 0=No Defect, 1=Minor Defect, 2=Minor to Moderate Defect, 3=Moderate Defect, 4=Significant Defect, 5=Most Significant Defect								2017 Inspections	
	2018 Inspections															
		Avg. Height	Material	Condition of Components												
	Structure No.	Rim-Invert (in.)	Type	Overall	Cover	Frame	Chimney	Steps	Cone	Reducing Slab	Barrel	Base	Connections (Influent)	Connections (Effluent)	Storm Drain Structure Observations	
5	17-17	N/A	Pre-cast Concrete	2	1	1	3	1	1	N/A	N/A	1	2	N/A	Grout scores missing	
6	1367-21	26	Pre-cast Concrete	3	1	1	4	N/A	N/A	N/A	N/A	1	N/A	1	Chimney cracked/broken	
	1367-19	32	Pre-cast Concrete	1	1	1	N/A	N/A	N/A	N/A	N/A	1	1	1		
	1367-18	23	Pre-cast Concrete	2	1	1	3	N/A	N/A	N/A	N/A	1	N/A	3		
	1367-16	28	Pre-cast Concrete	1	1	1	N/A	N/A	N/A	N/A	N/A	1	2	2		
	1367-23	23	Pre-cast Concrete	1	1	1	1	N/A	N/A	N/A	N/A	1	N/A	1		
	1367-15	57	Pre-cast Concrete	1	1	1	N/A	N/A	N/A	N/A	1	1	1	1		
7	1367-25	26	Pre-cast Concrete	1	1	1	N/A	N/A	N/A	N/A	N/A	1	N/A	1		
8	548-17	82	Pre-cast Concrete	1	1	1	1	1	1	N/A	N/A	1	1	1		
	548-15	102	Pre-cast Concrete	2	1	2	1	1	N/A	1	1	1	2	N/A		
	548-14	92	Pre-cast Concrete	2	1	2	2	1	2	N/A	2	2	2	2	Top grade ring has multiple cracks	
	548-9	64	Pre-cast Concrete	2	1	2	2	1	N/A	1	N/A	1	4	N/A	Grout on 10" line downstream missing, wire showing, grout on other lines not scored	
	548-8	70	Pre-cast Concrete	2	1	2	2	1	N/A	1	N/A	2	N/A	N/A	Pipe connections and chimney missing grout	
9	548-23	70	Pre-cast Concrete	2	1	1	2	1	N/A	1	N/A	2	N/A	N/A	Pipe connections not scored, circumferential crack in base at top of pipe connections	
	548-25	76	Pre-cast Concrete	2	1	1	2	1	N/A	1	N/A	1	N/A	N/A	Connections not scored	
	548-27	71	Pre-cast Concrete	2	1	3	2	1	N/A	1	1	1	1	1		
	548-28	79	Pre-cast Concrete	3	1	1	4	1	N/A	1	1	1	1	1	Chimney cracked/broken	
	548-30	82	Pre-cast Concrete	3	1	1	2	2	N/A	1	N/A	3	1	N/A	Only 1 Pipe connection scored, circumferential crack in base at pipe connections	
10	548-31	71	Pre-cast Concrete	3	1	1	2	1	N/A	1	N/A	3	3	2	Circumferential crack in base at pipe connections	
	548-31A	N/A	Pre-cast Concrete	1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	OGS	
	548-32	80	Pre-cast Concrete	3	1	1	3	1	N/A	2	N/A	3	N/A	N/A	Pipe connections not scored, circumferential crack in base at pipe connects, offset frame	
	548-33	63	Pre-cast Concrete	2	1	1	2	0	N/A	2	2	2	N/A	1	Influent connection not scored	
	548-256	119	Pre-cast Concrete	1	1	1	1	1	1	N/A	1	1	1	1		
	548-254	105	Pre-cast Concrete	1	1	1	1	N/A	N/A	N/A	2	1	2	2		

CR NHS Storm Drain Condition Report
PROJECT NO. 0A310554 / Z591280000

Page # in Appendix A	NHS Storm Drain Structure Conditions Dimond Blvd. (Jewel Lake to Old Seward)						Defect Grades: 0=No Defect, 1=Minor Defect, 2=Minor to Moderate Defect, 3=Moderate Defect, 4=Significant Defect, 5=Most Significant Defect								2017 Inspections	
	2018 Inspections															
		Avg. Height	Material	Condition of Components												
	Structure No.	Rim-Invert (in.)	Type	Overall	Cover	Frame	Chimney	Steps	Cone	Reducing Slab	Barrel	Base	Connections (Influent)	Connections (Effluent)	Storm Drain Structure Observations	
	548-258A	64	Pre-cast Concrete	2	1	1	2	1	N/A	1	1	1	2	2		
10	548-258	N/A	Pre-cast Concrete	1	1	1	1	1	N/A	1	N/A	1	N/A	N/A	Connections not scored	
	548-259	42	Pre-cast Concrete	1	1	1	1	1	N/A	1	N/A	1	1	1		
	1488-43	123	Pre-cast Concrete	1	1	2	1	1	N/A	N/A	N/A	1	1	1	Concrete in good condition, need to score cone and reducing slab	
11	1488-12	150	Pre-cast Concrete	1	1	1	2	1	1	1	1	1	N/A	N/A	Connections not scored	
	1488-14	129	Pre-cast Concrete	2	1	1	1	2	1	1	1	2	2	2		
12	1488-16	117	Pre-cast Concrete	1	1	1	1	1	1	1	N/A	1	1	2		
	1488-17	164	Pre-cast Concrete	3	1	1	4	2	2	2	2	1	1	1	Chimney grout, no ring	
	1488-23	125	Pre-cast Concrete	2	1	1	3	N/A	N/A	N/A	1	1	2	2	Mortar cracked on chimneys	
	1488-22	190	Pre-cast Concrete	3	1	2	4	1	N/A	N/A	2	1	1	1	Exposed rebar in chimney	
	1488-18	152	Pre-cast Concrete	1	1	1	2	1	1	1	1	1	1	1		
13	1488-24	72	Pre-cast Concrete	3	1	1	N/A	N/A	N/A	N/A	4	1	1	1	Exposed rebar in barrel	
	1488-19	85	Pre-cast Concrete	1	1	1	N/A	1	1	1	N/A	1	2	1		
	1488-27	106	Pre-cast Concrete	1	1	1	1	1	1	N/A	1	1	1	1		
	1488-29	150	Pre-cast Concrete	2	1	2	N/A	1	N/A	2,1	2,2	1	1	1	Component sequence: Cover, Frame, Slab, Barrel, Slab, Barrel, Base	
	1488-187	164	Pre-cast Concrete	2	2	2	1	1	1	1	1	1	2	2	Steps on north and south sides	
14	1488-195	174	Pre-cast Concrete	2	1	1	3	1	1	1	1	1	1	1		

CR NHS STORM DRAIN INSPECTIONS

STORM DRAIN STRUCTURE INSPECTION REPORT

Catchbasin Manhole # **1492-25**

Date, Inspector(s), & Location

Date of Inspection: Friday, May 25, 2018

Inspector(s): Miller

General Location: 3841 W DIMOND BLVD

Pipe Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

	Diameter	Type	In-Effluent	Rim to Invert	Depth of Flow	Fill Depth	Connection Type	Grade Score
1	12"	CMP	Influent	70"	0"		Grouted	1
2	30"	CMP	Effluent	177"	1"		Grouted	2
3	30"	CMP	Influent	177"	1"		Grouted	1
4	8"	CMP	Influent	36"	0"		Grouted	1

Structure Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

Overall Structural Condition: 2

Steps: 13, Metal, score 1

Depth of Sump: 12"

Depth of Debris in Sump: 0" to 6"

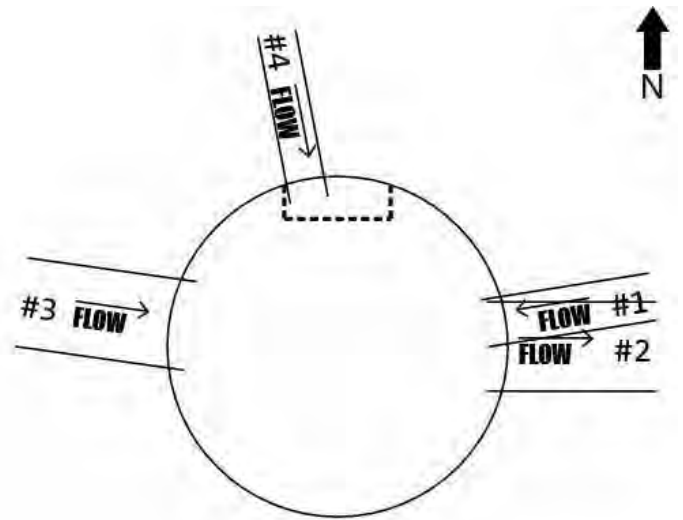
	Component	Material	Geometry	Grade Score	Dim A	Dim B	Height
1	Cover - Standard Cover	Metal	Rectangular	1	22"	18"	
2	Frame	Metal	Rectangular	1			7"
3	Chimney	Precast Concrete	Round	3			7"
4	Chimney	Precast Concrete	Round	2			7"
5	Cone	Precast Concrete	Eccentric	1			30"
6	Barrel Section	Precast Concrete	Round	1			33"
7	Barrel Section	Precast Concrete	Round	1			72"
8	Base	Precast Concrete	Round	1			34"

Primary Comments: Probed Inverts, Metal solid in 12", Hole in invert in downstream 30", Signs of corrosion in 30" pipes

Additional Comments: 1st grade ring broken, Aggregate exposed in 2nd Grade Ring



PIPE ID	
1	to 1492-25
2	1492-25 to 1492-24
3	1492-26 to 1492-25
4	1492-25A to 1492-25



Line/Connection Comments:

1492-25 to 1492-24

115' Inspected 5/25/18, Complete

1492-26 to 1492-25

Pipe is Curved, Inspected 136.1' 5/25/18, Complete Various amounts of debris in pipe



MH interior, South is up



12" Fin Drain Connection



Effluent 30" connection



Influent 30" Connection



1492-25 Facing West



Cover



Frame, South is up



Chimney(s)

CR NHS STORM DRAIN INSPECTIONS

STORM DRAIN STRUCTURE INSPECTION REPORT

Catchbasin Manhole # **1492-23**

Date, Inspector(s), & Location

Date of Inspection: Monday, July 24, 2017

Inspector(s): Miller, Stroh

General Location: 3828 W DIMOND BLVD

Pipe Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

	Diameter	Type	In-Effluent	Rim to Invert	Depth of Flow	Fill Depth	Connection Type	Grade Score
1	12"	CMP	Influent	85"	0"	0"	Grouted	1
2	30"	CMP	Effluent	185"	1"	0"	Grouted	1
3	12"	CMP	Influent	85"	0"	0"	Grouted	1
4	30"	CMP	Influent	185"	1"	0"	Grouted	1

Structure Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

Overall Structural Condition: 1

Steps: 13, Metal, score 1

Depth of Sump: 15"

Depth of Debris in Sump: 0" to 6"

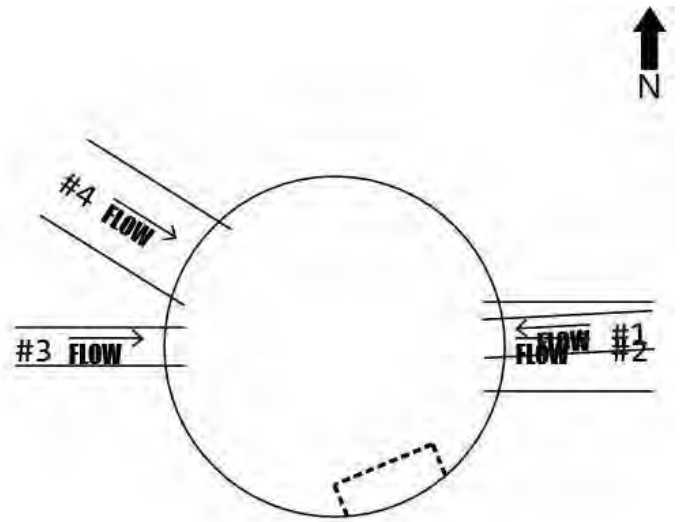
	Component	Material	Geometry	Grade Score	Dim A	Dim B	Height
1	Cover - Standard Cover	Metal	Rectangular	1	22"	18"	
2	Frame	Metal	Rectangular	1			7"
3	Chimney	Precast Concrete	Round	1			6"
4	Cone	Precast Concrete	Round	1			28"
5	Barrel Section	Precast Concrete	Round	1			70"
6	Barrel Section	Precast Concrete	Round	1			44"
7	Base	Precast Concrete	Round	1			45"

Primary Comments:

Additional Comments:



	PIPE ID
1	to 1492-23
2	1492-23 to 1492-21
3	to 1492-23
4	1492-24 to 1492-23



Line/Connection Comments:

to 1492-23

QV 7/24/17

1492-23 to 1492-21

355.6' INSPECTED 7/24/17

to 1492-23

QV 7/24/17

1492-24 to 1492-23

151' INSPECTED 7/24/17



1492-23 Facing North



Cover



Frame South is up



North is up

CR NHS STORM DRAIN INSPECTIONS

STORM DRAIN STRUCTURE INSPECTION REPORT

Catchbasin Manhole # **1492-21**

Date, Inspector(s), & Location

Date of Inspection: Monday, July 24, 2017

Inspector(s): Miller, Stroh

General Location: 3740 W DIMOND BLVD

Pipe Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

	Diameter	Type	In-Effluent	Rim to Invert	Depth of Flow	Fill Depth	Connection Type	Grade Score
1	12"	CMP	Influent	93"	0"	0"	Grouted	1
2	30"	CMP	Effluent	185"	1"	0"	Grouted	1
3	12"	CMP	Influent	166"	0"	0"	Grouted	1
4	30"	CMP	Influent	185"	1"	0"	Grouted	1
5	12"	CMP	Influent	96"	0"	0"	Grouted	1
6	18"	CMP	Influent	96"	0"	0"	Grouted	1

Structure Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

Overall Structural Condition: 1

Steps: 14, Metal, score 1

Depth of Sump: 18"

Depth of Debris in Sump: 0" to 6"

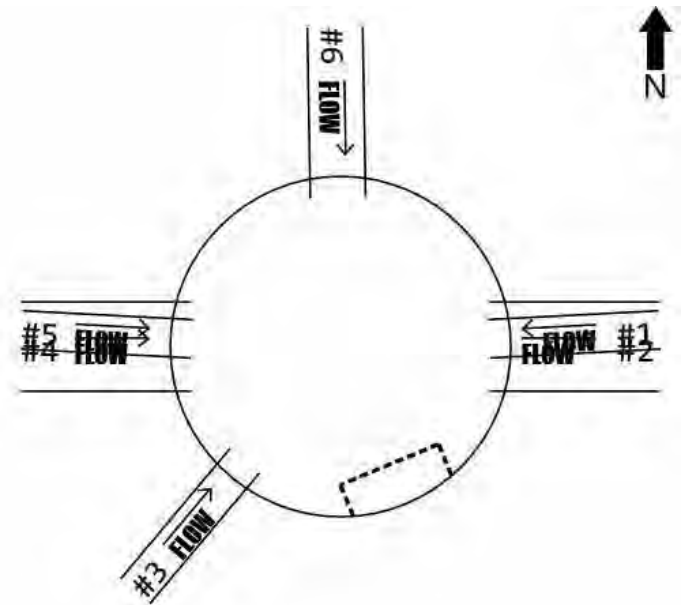
	Component	Material	Geometry	Grade Score	Dim A	Dim B	Height
1	Cover - Standard Cover	Metal	Rectangular	1	22"	18"	
2	Frame	Metal	Rectangular	1			7"
3	Chimney	Precast Concrete	Round	1			6"
4	Chimney	Precast Concrete	Round	1			6"
5	Reducing Slab	Precast Concrete	Round	1			9"
6	Barrel Section	Precast Concrete	Round	1			12"
7	Barrel Section	Precast Concrete	Round	1			70"
8	Barrel Section	Precast Concrete	Round	1			50"
9	Base	Precast Concrete	Round	1			43"

Primary Comments:

Additional Comments:



PIPE ID	
1	to 1492-21
2	1492-21 to 1492-20
3	to 1492-21
4	1492-23 to 1492-21
5	to 1492-21
6	1492-22 to 1492-21



Line/Connection Comments:

to 1492-21

QV 7/24/17

1492-21 to 1492-20

254' INSPECTED 7/24/17

1492-23 to 1492-21

355.6' INSPECTED 7/24/17

to 1492-21

QV 7/24/17

1492-22 to 1492-21

QV 7/24/17



1492-21 Facing West



Cover



Frame North is up



North is up

CR NHS STORM DRAIN INSPECTIONS

STORM DRAIN STRUCTURE INSPECTION REPORT

Catchbasin Manhole # **1492-20**

Date, Inspector(s), & Location

Date of Inspection: Monday, July 24, 2017

Inspector(s): Miller, Stroh

General Location: 3616 W DIMOND BLVD

Pipe Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

	Diameter	Type	In-Effluent	Rim to Invert	Depth of Flow	Fill Depth	Connection Type	Grade Score
1	12"	CMP	Influent	86"	0"	0"	Grouted	1
2	30"	CMP	Effluent	184"	2"	0"	Grouted	1
3	12"	CMP	Influent	35"	0"	0"	Grouted	1
4	30"	CMP	Influent	184"	2"	0"	Grouted	1
5	12"	CMP	Influent	84"	0"	0"	Grouted	1

Structure Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

Overall Structural Condition: 1

Steps: 13, Metal, score 1

Depth of Sump: 12"

Depth of Debris in Sump: 0" to 6"

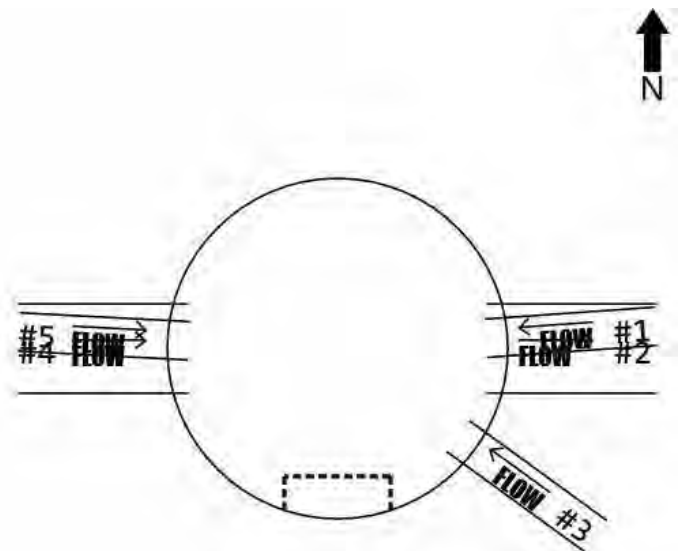
	Component	Material	Geometry	Grade Score	Dim A	Dim B	Height
1	Cover - Standard Cover	Metal	Rectangular	1	22"	18"	
2	Frame	Metal	Rectangular	1			7"
3	Chimney	Precast Concrete	Round	1			7"
4	Cone	Precast Concrete	Round	1			28"
5	Barrel Section	Precast Concrete	Round	1			38"
6	Barrel Section	Precast Concrete	Round	1			68"
7	Base	Precast Concrete	Round	1			32"

Primary Comments:

Additional Comments:



	PIPE ID
1	to 1492-20
2	1492-20 to 1492-18
3	1492-20A to 1492-20
4	1492-21 to 1492-20
5	to 1492-20



Line/Connection Comments:

to 1492-20

QV 7/24/17

1492-20 to 1492-18

230.7' INSPECTED 7/24/17

1492-20A to 1492-20

QV 7/24/17

1492-21 to 1492-20

254' INSPECTED 7/24/17

to 1492-20

QV 7/24/17



North is up



1492-20 Facing South





Cover



North is up

CR NHS STORM DRAIN INSPECTIONS

STORM DRAIN STRUCTURE INSPECTION REPORT

Inlet # **1492-20A**

Date, Inspector(s), & Location

Date of Inspection: Monday, July 24, 2017

Inspector(s): Miller

General Location:

Pipe Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

	Diameter	Type	In-Effluent	Rim to Invert	Depth of Flow	Fill Depth	Connection Type	Grade Score
1	12"	CMP	Effluent		0"	3"		1

Structure Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

Overall Structural Condition: 1

Steps: 0, score N/A

Depth of Sump: 0"

Depth of Debris in Sump:

Component	Material	Geometry	Grade Score	Dim A	Dim B	Height
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Primary Comments: PIPE INLET IN DITCH

Additional Comments:



CR NHS STORM DRAIN INSPECTIONS

STORM DRAIN STRUCTURE INSPECTION REPORT

Catchbasin Manhole # **1492-17**

Date, Inspector(s), & Location

Date of Inspection: Monday, July 24, 2017

Inspector(s): Miller, Stroh

General Location: 3520 W DIMOND BLVD

Pipe Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

	Diameter	Type	In-Effluent	Rim to Invert	Depth of Flow	Fill Depth	Connection Type	Grade Score
1	18"	CMP	Influent	123"	1"	0"	Grouted	2
2	30"	CMP	Effluent	205"	2"	0"	Grouted	2
3	12"	CMP	Influent	132"	0"	0"	Grouted	2
4	30"	CMP	Influent	130"	2"	0"	Grouted	2

Structure Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

Overall Structural Condition: 1

Steps: 15, Metal, score 1

Depth of Sump: 20"

Depth of Debris in Sump: 0" to 6"

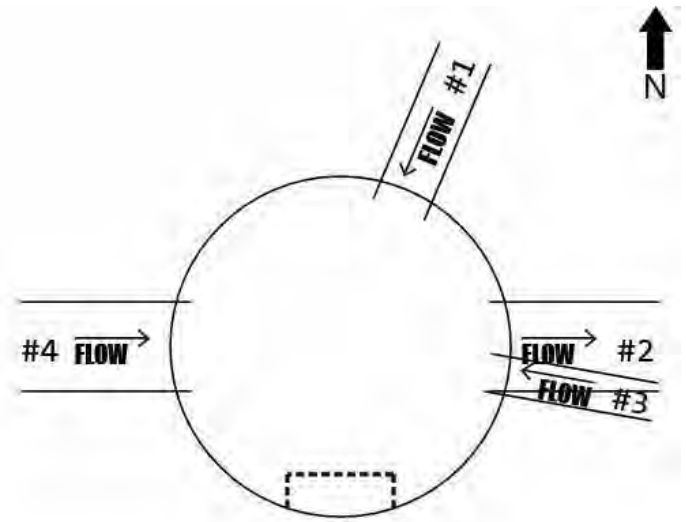
	Component	Material	Geometry	Grade Score	Dim A	Dim B	Height
1	Cover - Standard Cover	Metal	Rectangular	1	22"	18"	
2	Frame	Metal	Rectangular	1			7"
3	Chimney	Precast Concrete	Round	1			2"
4	Chimney	Precast Concrete	Round	1			4"
5	Chimney	Precast Concrete	Round	1			6"
6	Cone	Precast Concrete	Round	1			38"
7	Barrel Section	Precast Concrete	Round	1			70"
8	Barrel Section	Precast Concrete	Round	1			50"
9	Base	Precast Concrete	Round	1			43"

Primary Comments:

Additional Comments:



	PIPE ID
1	1492-53 to 1492-17
2	1492-17 to 1492-17A
3	to 1492-17
4	1492-18 to 1492-17



Line/Connection Comments:

1492-53 to 1492-17

QV 7/24/17

1492-17 to 1492-17A

111.8' INSPECTED 7/24/17

to 1492-17

QV 7/24/17

1492-18 to 1492-17

120' INSPECTED 7/24/17



1492-17 Facing North



Cover



Frame. North is up



North is up



North is up

CR NHS STORM DRAIN INSPECTIONS

STORM DRAIN STRUCTURE INSPECTION REPORT

Catchbasin Manhole # **1492-17A**

Date, Inspector(s), & Location

Date of Inspection: Monday, July 24, 2017

Inspector(s): Miller, Stroh

General Location:

Pipe Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

	Diameter	Type	In-Effluent	Rim to Invert	Depth of Flow	Fill Depth	Connection Type	Grade Score
1	30"	CMP	Effluent	178"	1"	0"	Grouted	1
2	12"	CMP	Influent	137"	0"	0"	Grouted	1
3	30"	CMP	Influent	169"	2"	0"	Grouted	1

Structure Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

Overall Structural Condition: 2

Steps: 10, Metal, score 1

Depth of Sump: 15"

Depth of Debris in Sump: 0" to 6"

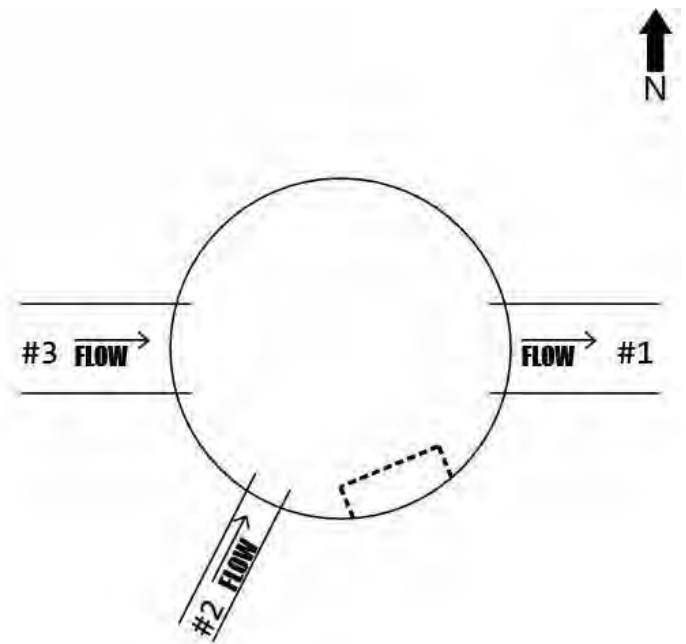
	Component	Material	Geometry	Grade Score	Dim A	Dim B	Height
1	Cover - Standard Cover	Metal	Rectangular	1			
2	Frame	Metal	Rectangular	1			7"
3	Chimney	Precast Concrete	Round	2			2"
4	Chimney	Precast Concrete	Round	2			6"
5	Cone	Precast Concrete	Round	2			28"
6	Barrel Section	Precast Concrete	Round	1			36"
7	Barrel Section	Precast Concrete	Round	2			72"
8	Base	Precast Concrete	Round	1			43"

Primary Comments:

Additional Comments:



PIPE ID	
1	1492-17A to 1492-3
2	to 1492-17A
3	1492-17 to 1492-17A



Line/Connection Comments:

1492-17A to 1492-3

224.1' Inspected 7/24/17

1492-17 to 1492-17A

111.8' INSPECTED 7/24/17



1492-17A Facing North



Cover



Frame



North is Up



Frame and Chimney

CR NHS STORM DRAIN INSPECTIONS

STORM DRAIN STRUCTURE INSPECTION REPORT

OGS # **1492-3**

Date, Inspector(s), & Location

Date of Inspection: Monday, July 24, 2017

Inspector(s): Miller, Stroh

General Location: 9201 BLACKBERRY ST

Pipe Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

	Diameter	Type	In-Effluent	Rim to Invert	Depth of Flow	Fill Depth	Connection Type	Grade Score
1	12"	CMP	Influent	83"	0"	0"	Grouted	2
2	18"	CMP	Influent	137"	0"	0"	Grouted	2
3			Effluent					
4	30"	CMP	Influent	246"	1"		Grouted	2
5	18"	CMP	Influent	88"	0"	0"	Grouted	2

Structure Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

Overall Structural Condition: 1

Steps: 15, Metal, score 1

Depth of Sump:

Depth of Debris in Sump:

	Component	Material	Geometry	Grade Score	Dim A	Dim B	Height
1	Cover - Standard Cover	Metal	Rectangular	1	22"	18"	
10	Base	Precast Concrete	Round	1			
2	Frame	Metal	Rectangular	1			
3	Chimney	Precast Concrete	Round	2			6"
4	Chimney	Precast Concrete	Round	2			6"
5	Chimney	Precast Concrete	Round	2			6"
6	Cone	Precast Concrete	Round	1			26"
7	Barrel Section	Precast Concrete	Round	1			52"
8	Barrel Section	Precast Concrete	Round	1			89"
9	Barrel Section	Precast Concrete	Round	1			158"

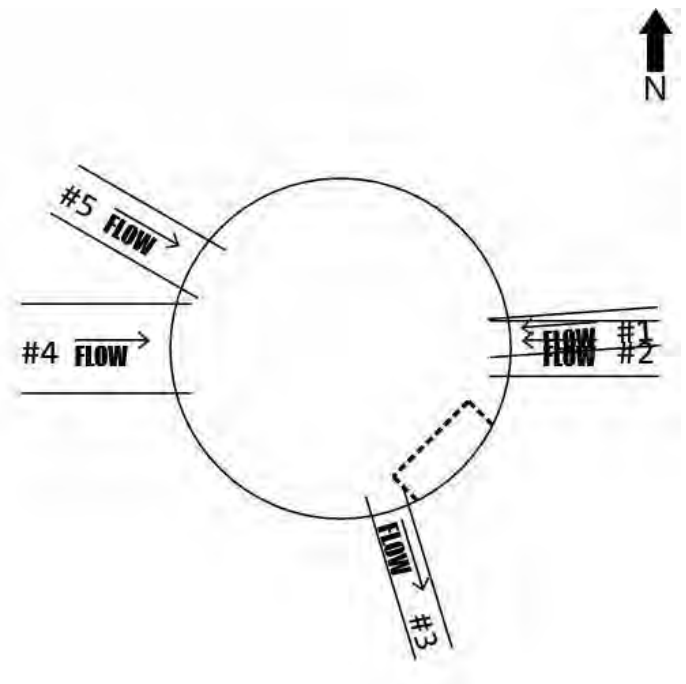
Primary Comments: E 12" LINE, Cracks in Chimney, Effluent connection not visible, Concrete good overall quality



Additional Comments:



	PIPE ID
1	to 1492-3
2	1492-4 to 1492-3
3	1492-3 to
4	1492-17A to 1492-3
5	1492-54 to 1492-3



Line/Connection Comments:

to 1492-3

QV 7/24/17

1492-4 to 1492-3

98.3' Inspected 7/24/17

1492-17A to 1492-3

224.1' Inspected 7/24/17

1492-54 to 1492-3

INSPECTED 156.1' 7/24/17



1492-3 Facing North



Cover

CR NHS STORM DRAIN INSPECTIONS

STORM DRAIN STRUCTURE INSPECTION REPORT

Catchbasin Manhole # **1492-4**

Date, Inspector(s), & Location

Date of Inspection: Monday, July 24, 2017

Inspector(s): Miller, Stroh

General Location: 9201 COMMONS PL

Pipe Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

	Diameter	Type	In-Effluent	Rim to Invert	Depth of Flow	Fill Depth	Connection Type	Grade Score
1	18"	CMP	Influent	102"	1"	0"	Grouted	1
2	18"	CMP	Influent	114"	1"	0"	Grouted	1
3	18"	CMP	Effluent	126"	0"	0"	Grouted	1
4	12"	CMP	Influent	87"	0"	0"	Grouted	1

Structure Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

Overall Structural Condition: 1

Steps: 9, Metal, score 1

Depth of Sump: 13"

Depth of Debris in Sump: 0" to 6"

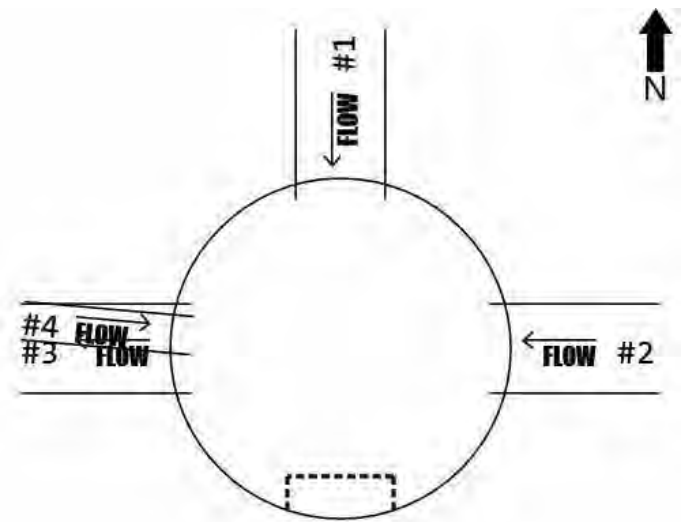
	Component	Material	Geometry	Grade Score	Dim A	Dim B	Height
1	Cover - Standard Cover	Metal	Rectangular	1	22"	18"	
2	Frame	Metal	Rectangular	1			6"
3	Chimney	Precast Concrete	Round	1			6"
4	Cone	Precast Concrete	Round	2			28"
5	Barrel Section	Precast Concrete	Round	1			36"
6	Barrel Section	Precast Concrete	Round	1			32"
7	Base	Precast Concrete	Round	1			24"

Primary Comments: W 12" LINE

Additional Comments: BASE ALMOST ALL UNDERWATER



	PIPE ID
1	1492-15 to 1492-4
2	1492-5 to 1492-4
3	1492-4 to 1492-3
4	to 1492-4



Line/Connection Comments:

1492-5 to 1492-4

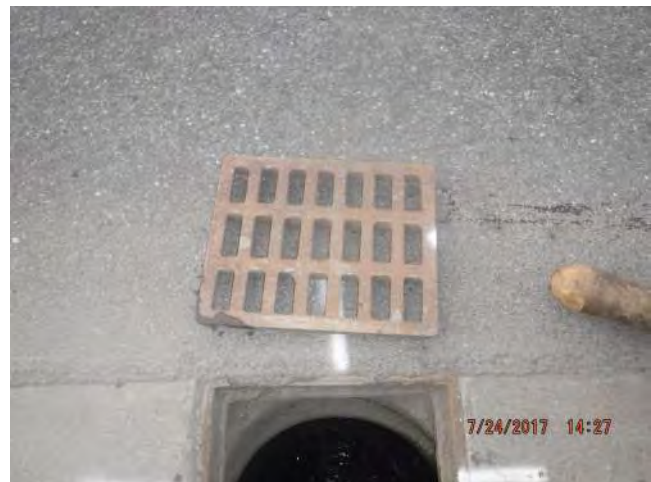
INSPECTED 268.8' 7/25/17

1492-4 to 1492-3

98.3' Inspected 7/24/17



1492-4 Facing North



Cover



Frame



North is up



North is up

CR NHS STORM DRAIN INSPECTIONS

STORM DRAIN STRUCTURE INSPECTION REPORT

Catchbasin Manhole # **1492-5**

Date, Inspector(s), & Location

Date of Inspection: Tuesday, July 25, 2017

Inspector(s): Miller, Stroh

General Location: 9212 CAMPBELL TERRACE DR

Pipe Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

	Diameter	Type	In-Effluent	Rim to Invert	Depth of Flow	Fill Depth	Connection Type	Grade Score
1	18"	CMP	Influent	72"	0"	0"	Grouted	3
2	18"	CMP	Influent	80"	1"	0"	Grouted	2
3	18"	CMP	Effluent	84"	1"	0"	Grouted	2

Structure Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

Overall Structural Condition: 3

Steps: 5, Metal, score 1

Depth of Sump: 10"

Depth of Debris in Sump: 0" to 6"

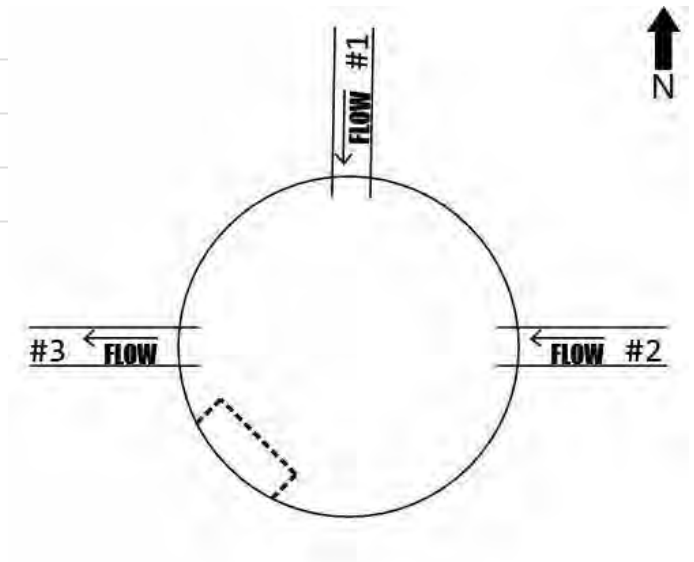
	Component	Material	Geometry	Grade Score	Dim A	Dim B	Height
1	Cover - Standard Cover	Metal	Rectangular	1	22"	18"	
2	Frame	Metal	Rectangular	1			6"
3	Chimney	Precast Concrete	Round	1			4"
4	Chimney	Precast Concrete	Round	2			6"
5	Cone	Precast Concrete	Eccentric	1			28"
6	Barrel Section	Precast Concrete	Round	1			40"
7	Base	Precast Concrete	Round				10"

Primary Comments: BASE UNDER WATER

Additional Comments:



	PIPE ID
1	1492-12 to 1492-5
2	1492-6 to 1492-5
3	1492-5 to 1492-4



Line/Connection Comments:

1492-12 to 1492-5

61.8' INSPECTED 7/25/17

1492-6 to 1492-5

295.8' INSPECTED 7/25/17

1492-5 to 1492-4

INSPECTED 268.8' 7/25/17



1492-5 Facing North



Cover



Frame



North is up



Chimney

CR NHS STORM DRAIN INSPECTIONS

STORM DRAIN STRUCTURE INSPECTION REPORT

Catchbasin Manhole # **585-50**

Date, Inspector(s), & Location

Date of Inspection: Saturday, July 22, 2017

Inspector(s): Miller, Stroh

General Location:

Pipe Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

	Diameter	Type	In-Effluent	Rim to Invert	Depth of Flow	Fill Depth	Connection Type	Grade Score
1	18"	CMP	Effluent	62"	0"	0"	Grouted	2
2	18"	CMP	Influent	62"	0"	0"	Grouted	2
3	18"	CMP	Influent	62"	0"	0"	Grouted	2

Structure Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

Overall Structural Condition: 1

Steps: 4, Metal, score 1

Depth of Sump: 12"

Depth of Debris in Sump: 0" to 6"

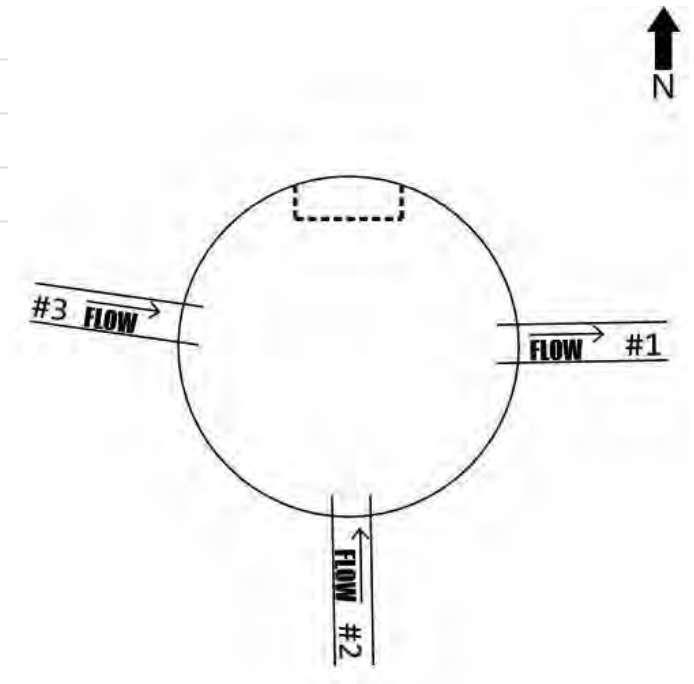
	Component	Material	Geometry	Grade Score	Dim A	Dim B	Height
1	Cover - Standard Cover	Metal	Rectangular	1	22"	18"	
2	Frame	Metal	Rectangular	1			6"
3	Chimney	Precast Concrete	Round	2			2"
4	Chimney	Precast Concrete	Round	2			5"
5	Cone	Precast Concrete	Round	1			28"
6	Base	Precast Concrete	Round	1			30"

Primary Comments:

Additional Comments:



	PIPE ID
1	585-50 to 585-48
2	585-52 to 585-50
3	585-51 to 585-50



Line/Connection Comments:

585-50 to 585-48

340.6' Inspected 7/22/17

585-52 to 585-50

63.2' Inspected 7/22/17

585-51 to 585-50

64.9' Inspected 7/22/17



585-50 Facing South



Cover



Facing North



Facing South

CR NHS STORM DRAIN INSPECTIONS

STORM DRAIN STRUCTURE INSPECTION REPORT

Catch Basin # **585-36**

Date, Inspector(s), & Location

Date of Inspection: Friday, July 21, 2017

Inspector(s): Miller, Stroh

General Location: 9130 WASHBURN ST

Pipe Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

	Diameter	Type	In-Effluent	Rim to Invert	Depth of Flow	Fill Depth	Connection Type	Grade Score
1	18"	CMP	Effluent	108"	1"	0"	Grouted	1
2	18"	CMP	Influent	108"	1"	0"	Grouted	1
3	18"	CMP	Influent	94"	1"	0"	Grouted	3

Structure Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

Overall Structural Condition: 1

Steps: 8, Metal, score 1

Depth of Sump: 14"

Depth of Debris in Sump: 0" to 6"

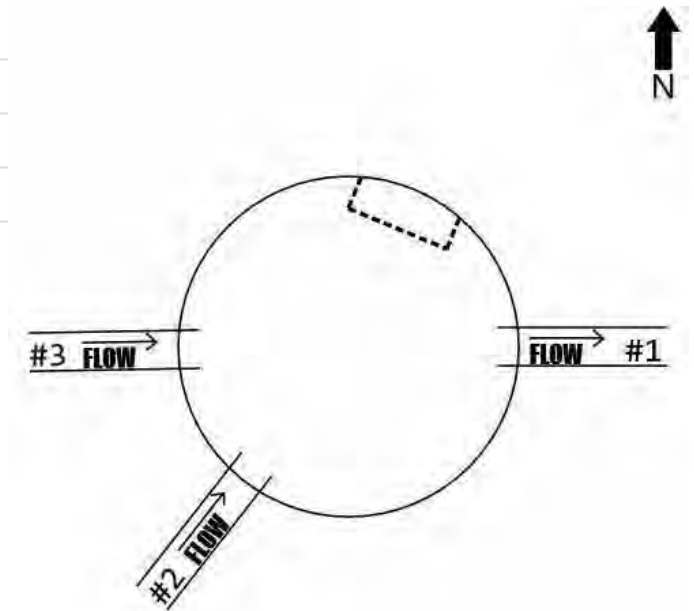
	Component	Material	Geometry	Grade Score	Dim A	Dim B	Height
1	Cover - Standard Cover	Metal	Rectangular	1	36"	18"	
2	Frame	Metal	Rectangular	1			6"
3	Chimney	Precast Concrete	Rectangular	3			1"
4	Cone	Precast Concrete	Round	1			34"
5	Barrel Section	Precast Concrete	Round	1			38"
6	Base	Precast Concrete	Round	1			34"

Primary Comments:

Additional Comments:



	PIPE ID
1	585-36 to 585-15
2	585-37 to 585-36
3	585-48 to 585-36



Line/Connection Comments:

585-36 to 585-15

INSPECTED 100.3' 7/21/17

585-37 to 585-36

111.1' INSPECTED 7/21/17

585-48 to 585-36

322.2' INSPECTED 7/21/17



585-36 Facing North



Cover



Frame Facing North



Facing South

CR NHS STORM DRAIN INSPECTIONS

STORM DRAIN STRUCTURE INSPECTION REPORT

Catchbasin Manhole # **585-15**

Date, Inspector(s), & Location

Date of Inspection: Friday, July 21, 2017

Inspector(s): Miller, Stroh

General Location: 2727 W DIMOND BLVD

Pipe Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

	Diameter	Type	In-Effluent	Rim to Invert	Depth of Flow	Fill Depth	Connection Type	Grade Score
1	24"	CMP	Effluent	142"			Grouted	2
2	18"	CMP	Influent	50"			Grouted	2
3	18"	CMP	Influent	104"			Grouted	2
4	24"	CMP	Influent	104"			Grouted	2

Structure Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

Overall Structural Condition: 1

Steps: 8, Metal, score 1

Depth of Sump: 20"

Depth of Debris in Sump: 0" to 6"

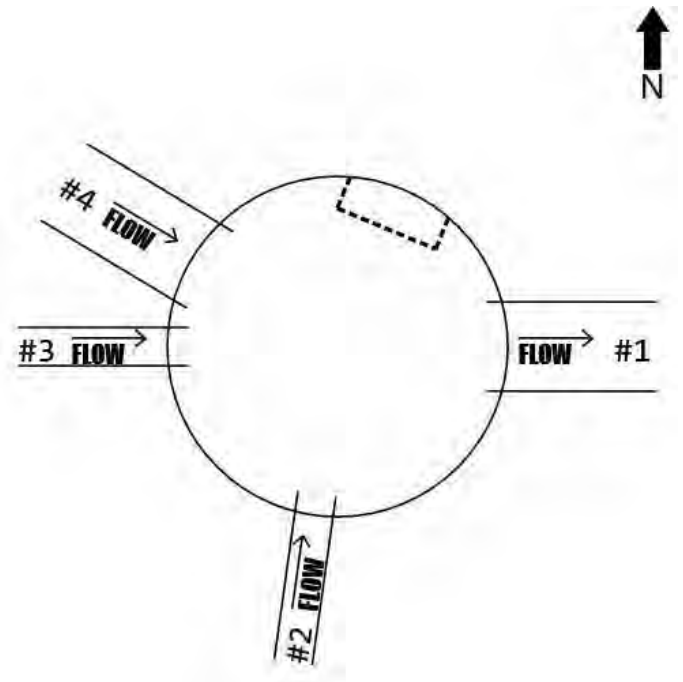
	Component	Material	Geometry	Grade Score	Dim A	Dim B	Height
1	Cover - Standard Cover	Metal	Rectangular	1	36"	18"	
2	Frame	Metal	Round	1			9"
3	Chimney	Precast Concrete	Round	2			7"
4	Reducing Slab	Precast Concrete	Round	1			9"
5	Barrel Section	Precast Concrete	Round	1			75"
6	Base	Precast Concrete	Round	1			41"

Primary Comments:

Additional Comments:



	PIPE ID
1	585-15 to 585-14
2	585-53 to 585-15
3	585-36 to 585-15
4	585-16 to 585-15



Line/Connection Comments:

585-15 to 585-14

Inspected 205.9' 7/21/17

585-53 to 585-15

INSPECTED 92.5' 7/21/17

585-36 to 585-15

INSPECTED 100.3' 7/21/17

585-16 to 585-15

INSPECTED 53.7' 7/21/17



585-15 Facing East



Cover



Facing North



Facing Northeast



Facing Northeast

CR NHS STORM DRAIN INSPECTIONS

STORM DRAIN STRUCTURE INSPECTION REPORT

Catchbasin Manhole # **585-14**

Date, Inspector(s), & Location

Date of Inspection: Friday, July 21, 2017

Inspector(s): Miller, Stroh

General Location: 2727 W DIMOND BLVD

Pipe Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

	Diameter	Type	In-Effluent	Rim to Invert	Depth of Flow	Fill Depth	Connection Type	Grade Score
1	24"	CMP	Effluent	87"			Grouted	3
2	24"	CMP	Influent	87"			Grouted	3

Structure Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

Overall Structural Condition: 3

Steps: 4, Metal, score 1

Depth of Sump: 20"

Depth of Debris in Sump: 0" to 6"

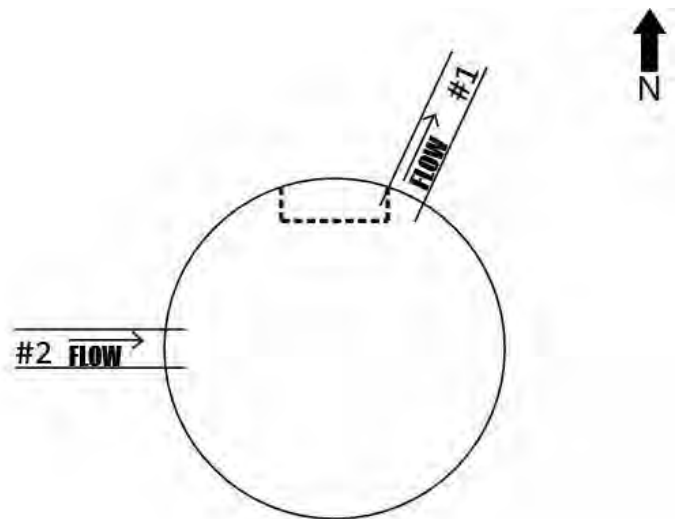
	Component	Material	Geometry	Grade Score	Dim A	Dim B	Height
1	Cover - Standard Cover	Metal	Rectangular	1	36"	18"	
2	Frame	Metal	Rectangular	1			7"
3	Chimney	Precast Concrete	Rectangular	4			2"
4	Cone	Precast Concrete	Eccentric	1			40"
5	Barrel Section	Precast Concrete	Round	1			12"
6	Base	Precast Concrete	Round	3			37"

Primary Comments: CRACKED BASE

Additional Comments:



	PIPE ID
1	585-14 to 585-13
2	585-15 to 585-14



Line/Connection Comments:

585-14 to 585-13

Inspected 34.3' 7/21/17

585-15 to 585-14

Inspected 205.9' 7/21/17



585-14 Facing East



Cover



Facing North



Facing North



Circumferential crack in base



Pipe Connections facing South

CR NHS STORM DRAIN INSPECTIONS

STORM DRAIN STRUCTURE INSPECTION REPORT

Catchbasin Manhole # 585-12

Date, Inspector(s), & Location

Date of Inspection: Friday, July 21, 2017

Inspector(s): Miller, Stroh

General Location:

Pipe Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

	Diameter	Type	In-Effluent	Rim to Invert	Depth of Flow	Fill Depth	Connection Type	Grade Score
1	18"	CMP	Influent					
2	30"	CMP	Effluent					
3	24"	CMP	Influent					

Structure Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

Overall Structural Condition: 2

Steps: 7, Metal, score 1

Depth of Sump: 14"

Depth of Debris in Sump: 0" to 6"

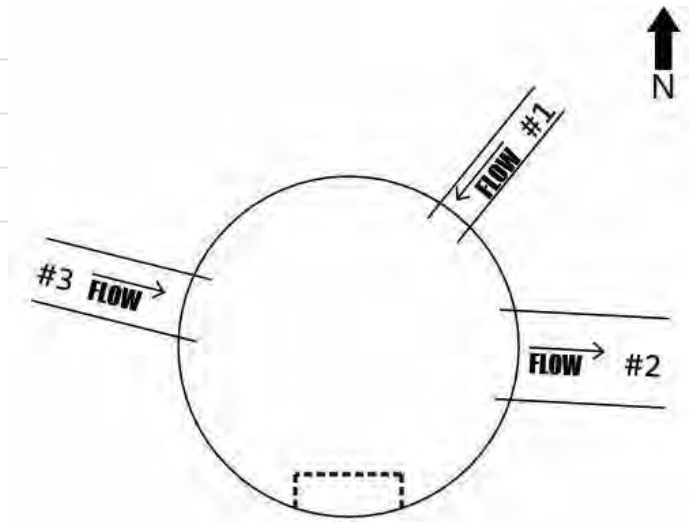
Component	Material	Geometry	Grade Score	Dim A	Dim B	Height
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Primary Comments:

Additional Comments:



	PIPE ID
1	585-54 to 585-12
2	585-12 to 585-4
3	585-13 to 585-12



Line/Connection Comments:

585-54 to 585-12

Inspected 24.7' 7/21/17

585-12 to 585-4

INSPECTED 232.9' 7/21/17

585-13 to 585-12

Inspected 35.8' 7/21/17



CR NHS STORM DRAIN INSPECTIONS

STORM DRAIN STRUCTURE INSPECTION REPORT

Catchbasin Manhole # **585-11**

Date, Inspector(s), & Location

Date of Inspection: Tuesday, July 25, 2017

Inspector(s): Miller, Stroh

General Location: 2700 W DIMOND BLVD

Pipe Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

	Diameter	Type	In-Effluent	Rim to Invert	Depth of Flow	Fill Depth	Connection Type	Grade Score
1	18"	CMP	Effluent	85"	0"	3"	Grouted	1

Structure Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

Overall Structural Condition: 1

Steps: 5, Metal, score 1

Depth of Sump: 14"

Depth of Debris in Sump: 6" to 18"

	Component	Material	Geometry	Grade Score	Dim A	Dim B	Height
1	Cover - Standard Cover	Metal	Rectangular	1	22"	18"	
2	Frame	Metal	Rectangular	1			6"
3	Chimney	Precast Concrete	Round	2			6"
4	Cone	Precast Concrete	Round	1			27"
5	Barrel Section	Precast Concrete	Round	1			24"
6	Base	Precast Concrete	Round	1			40"

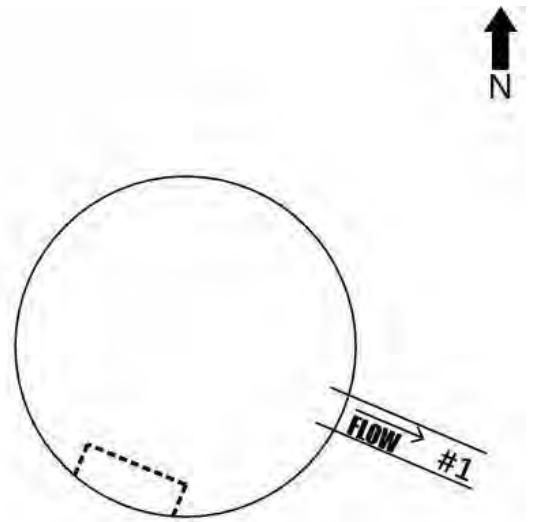
Primary Comments: BASE UNDERWATER

Additional Comments: SE 12" LINE



PIPE ID

1 585-11 to 585-7



Line/Connection Comments:

585-11 to 585-7

65' INSPECTED 7/25/17



585-11 Facing East



Cover



Facing North



Effluent Pipe



Influent Pipe



Facing North

CR NHS STORM DRAIN INSPECTIONS

STORM DRAIN STRUCTURE INSPECTION REPORT

Catchbasin Manhole # 585-6

Date, Inspector(s), & Location

Date of Inspection: Tuesday, July 25, 2017

Inspector(s): Miller, Stroh

General Location: 9201 ARLENE DR

Pipe Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

	Diameter	Type	In-Effluent	Rim to Invert	Depth of Flow	Fill Depth	Connection Type	Grade Score
1	18"	CMP	Effluent	116"	2"	0"	Grouted	1
2	18"	CMP	Influent	116"	1"	0"	Grouted	1

Structure Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

Overall Structural Condition: 2

Steps: 8, Metal, score 1

Depth of Sump: 10"

Depth of Debris in Sump: 0" to 6"

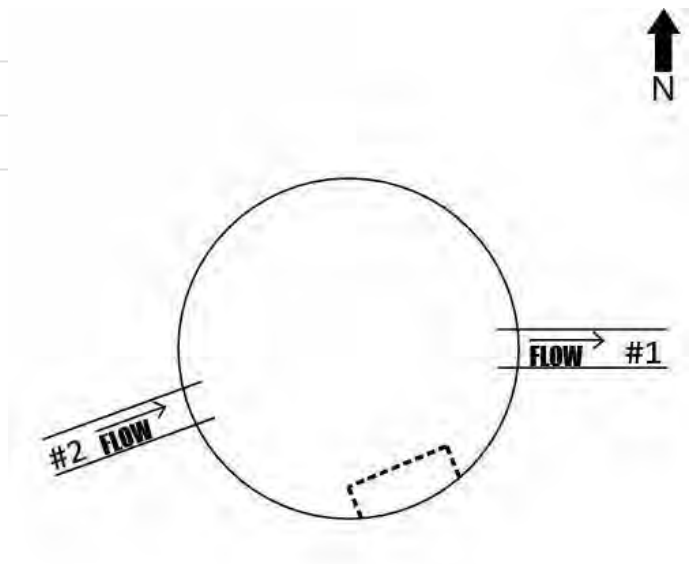
	Component	Material	Geometry	Grade Score	Dim A	Dim B	Height
1	Cover - Standard Cover	Metal	Rectangular	1	22"	18"	
2	Frame	Metal	Rectangular	1			6"
3	Chimney	Precast Concrete	Round	3			4"
4	Chimney	Precast Concrete	Round	1			4"
5	Chimney	Precast Concrete	Round	1			6"
6	Cone	Precast Concrete	Round	2			27"
7	Barrel Section	Precast Concrete	Round	1			36"
8	Base	Precast Concrete	Round	1			42"

Primary Comments: 12" SE LINE

Additional Comments:



	PIPE ID
1	585-6 to 585-5
2	585-7 to 585-6



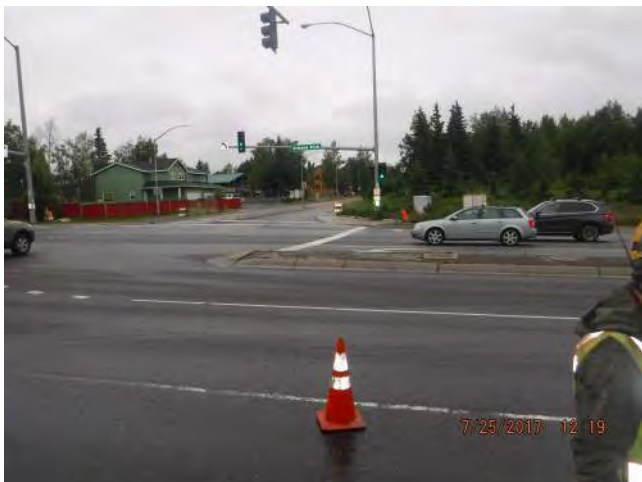
Line/Connection Comments:

585-6 to 585-5

INSPECTED 97' 7/25/17

585-7 to 585-6

74.8' INSPECTED 7/25/17



585-6 Facing North



Cover



Frame



Facing North



Facing North

CR NHS STORM DRAIN INSPECTIONS

STORM DRAIN STRUCTURE INSPECTION REPORT

Catchbasin Manhole # 585-5

Date, Inspector(s), & Location

Date of Inspection: Tuesday, July 25, 2017

Inspector(s): Miller, Stroh

General Location: 9201 ARLENE DR

Pipe Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

	Diameter	Type	In-Effluent	Rim to Invert	Depth of Flow	Fill Depth	Connection Type	Grade Score
1	18"	CMP	Effluent	96"	2"	0"	Grouted	1
2	18"	CMP	Influent	96"	2"	0"	Grouted	1

Structure Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

Overall Structural Condition: 1

Steps: 6, Metal, score 1

Depth of Sump: 7"

Depth of Debris in Sump: 0" to 6"

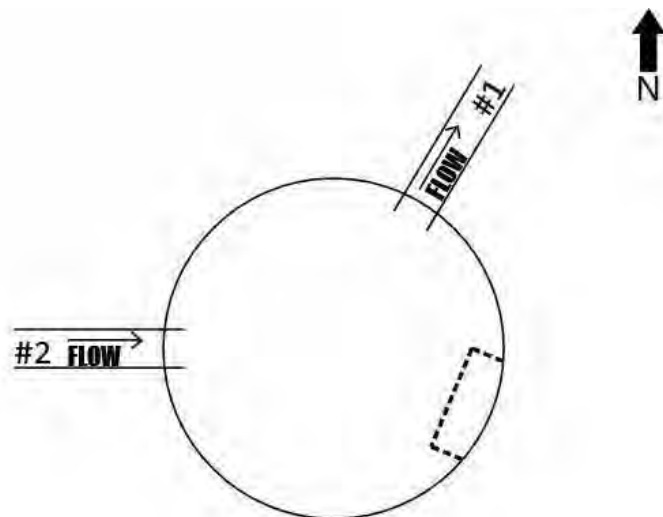
	Component	Material	Geometry	Grade Score	Dim A	Dim B	Height
1	Cover - Standard Cover	Metal	Rectangular	1	22"	18"	
2	Frame	Metal	Rectangular	1			6"
3	Chimney	Precast Concrete	Round	1			4"
4	Cone	Precast Concrete	Eccentric	1			28"
5	Barrel Section	Precast Concrete	Round	1			24"
6	Base	Precast Concrete	Round	1			32"

Primary Comments: 97.4' INSPECTED 7/25/17

Additional Comments:



	PIPE ID
1	585-5 to 585-4
2	585-6 to 585-5



Line/Connection Comments:

585-5 to 585-4

123.8' INSPECTED 7/25/17

585-6 to 585-5

INSPECTED 97' 7/25/17



585-5 Facing West



Cover



Frame



North is up

CR NHS STORM DRAIN INSPECTIONS

STORM DRAIN STRUCTURE INSPECTION REPORT

Catchbasin Manhole # 585-3

Date, Inspector(s), & Location

Date of Inspection: Friday, July 21, 2017

Inspector(s): Stroh

General Location: 2651 W DIMOND BLVD

Pipe Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

	Diameter	Type	In-Effluent	Rim to Invert	Depth of Flow	Fill Depth	Connection Type	Grade Score
1	30"	CMP	Effluent	118"	1"		Grouted	1
2	30"	CMP	Influent	79"	1"		Grouted	1

Structure Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

Overall Structural Condition: 1

Steps: 6, Metal, score 1

Depth of Sump: 18"

Depth of Debris in Sump: 0" to 6"

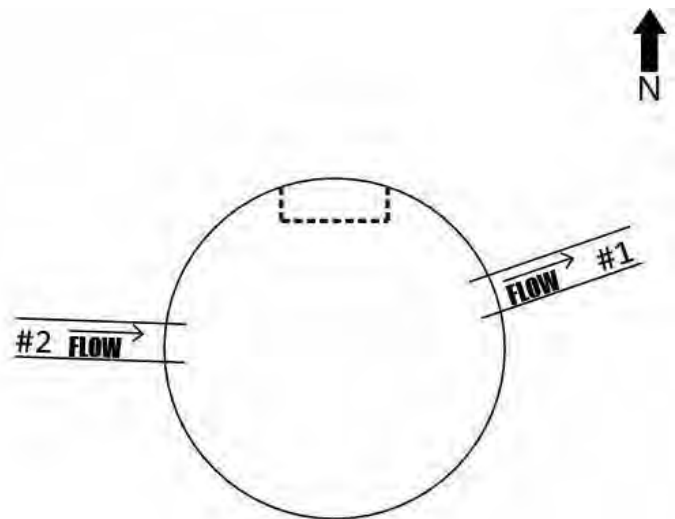
	Component	Material	Geometry	Grade Score	Dim A	Dim B	Height
1	Cover - Standard Cover	Metal	Rectangular	1	22"	18"	
2	Frame	Metal	Rectangular	1			6"
3	Chimney	Precast Concrete	Round	1			6"
4	Chimney	Precast Concrete	Round	1			6"
5	Cone	Precast Concrete	Eccentric	1			36"
6	Barrel Section	Precast Concrete	Round	1			50"
7	Base	Precast Concrete	Round	1			41"

Primary Comments:

Additional Comments:



	PIPE ID
1	585-3 to 585-2
2	585-4 to 585-3



Line/Connection Comments:

585-3 to 585-2

70.4' Inspected 7/21/17

585-4 to 585-3

INSPECTED 327.5' 7/21/17



Chimney facing East



Northeast is up



585-3 Facing West



North is up



Chimney facing west

CR NHS STORM DRAIN INSPECTIONS

STORM DRAIN STRUCTURE INSPECTION REPORT

Catchbasin Manhole # 585-72

Date, Inspector(s), & Location

Date of Inspection: Friday, July 21, 2017

Inspector(s): Stroh

General Location: 2651 W DIMOND BLVD

Pipe Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

	Diameter	Type	In-Effluent	Rim to Invert	Depth of Flow	Fill Depth	Connection Type	Grade Score
1	18"	CMP	Influent	80"	0"		Grouted	1
2	18"	CMP	Effluent	80"	0"		Grouted	1

Structure Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

Overall Structural Condition: 1

Steps: 4, Metal, score 1

Depth of Sump: 16"

Depth of Debris in Sump: 0" to 6"

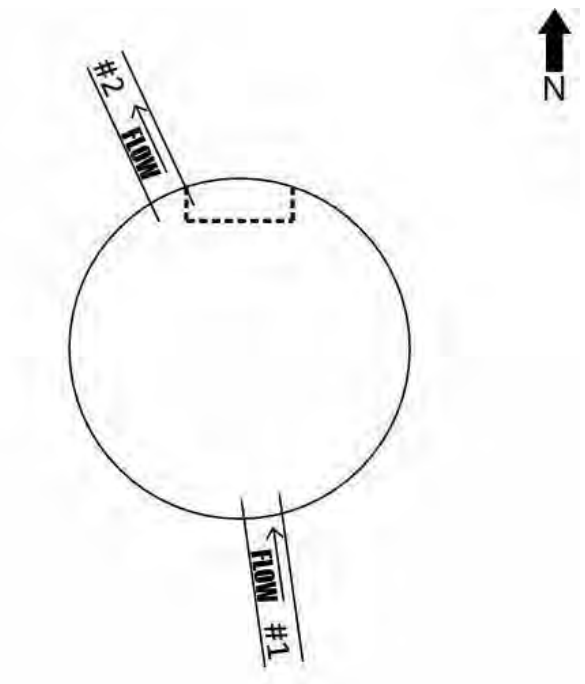
	Component	Material	Geometry	Grade Score	Dim A	Dim B	Height
1	Cover - Standard Cover	Metal	Rectangular	1	22"	18"	
2	Frame	Metal	Rectangular	1			6"
3	Chimney	Precast Concrete	Round	2			4"
4	Chimney	Precast Concrete	Round	2			4"
5	Cone	Precast Concrete	Round	1			39"
6	Base	Precast Concrete	Round	1			41"

Primary Comments:

Additional Comments:



	PIPE ID
1	585-73 to 585-72
2	585-72 to 585-2



Line/Connection Comments:

585-73 to 585-72

91.9' Inspected 7/21/17

585-72 to 585-2

25.1' Inspected 7/21/17



585-72 Facing Northwest



Chimney and Frame facing West



Chimney and Frame facing East



Effluent Pipe



Influent pipe

CR NHS STORM DRAIN INSPECTIONS

STORM DRAIN STRUCTURE INSPECTION REPORT

Catchbasin Manhole # 17-6

Date, Inspector(s), & Location

Date of Inspection: Monday, July 9, 2018

Inspector(s): Stratton

General Location: 2651 W DIMOND BLVD

Pipe Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

	Diameter	Type	In-Effluent	Rim to Invert	Depth of Flow	Fill Depth	Connection Type	Grade Score
1	24"	CMP	Influent	87"			Grouted	1
2	8"	CMP	Influent	84"			Grouted	1
3	24"	CMP	Effluent	88"			Grouted	1

Structure Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

Overall Structural Condition: 1

Steps: 6, Metal, score 1

Depth of Sump:

Depth of Debris in Sump:

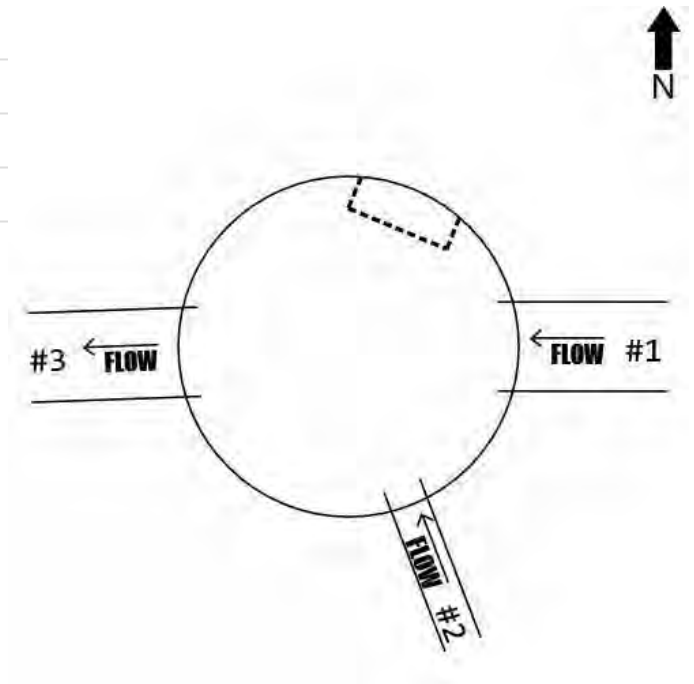
	Component	Material	Geometry	Grade Score	Dim A	Dim B	Height
1	Cover - Standard Cover	Metal	Rectangular	1	36"	18"	
2	Frame	Metal	Rectangular	1			10"
3	Cone	Precast Concrete	Eccentric	1			40"
4	Barrel Section	Precast Concrete	Round	1			12"
5	Base	Precast Concrete	Round	1			32"

Primary Comments:

Additional Comments:



	PIPE ID
1	17-6A to 17-6
2	to 17-6
3	17-6 to 17-3



Line/Connection Comments:

17-6A to 17-6

Inspected 47.8' Complete 7/9/18

17-6 to 17-3

Inspected 213.1' Complete 7/9/18



17-6 Facing East



17-6 Cover, Frame



17-6 East is up

CR NHS STORM DRAIN INSPECTIONS

STORM DRAIN STRUCTURE INSPECTION REPORT

Catch Basin # **17-13**

Date, Inspector(s), & Location

Date of Inspection: Monday, July 9, 2018

Inspector(s): Stratton

General Location: 2197 W DIMOND BLVD

Pipe Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

	Diameter	Type	In-Effluent	Rim to Invert	Depth of Flow	Fill Depth	Connection Type	Grade Score
1	18"	CMP	Influent	91"				
2	12"	CMP	Influent	74"	0"		Grouted	2
3	24"	CMP	Effluent	92"			Grouted	

Structure Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

Overall Structural Condition: 1

Steps: 5, Metal, score 1

Depth of Sump:

Depth of Debris in Sump:

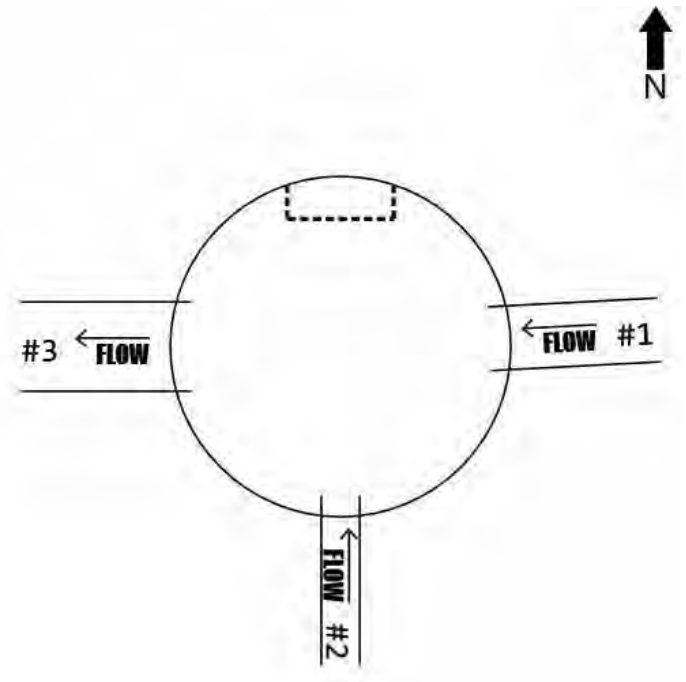
	Component	Material	Geometry	Grade Score	Dim A	Dim B	Height
1	Cover - Standard Cover	Metal	Rectangular	1	22"	18"	
2	Frame	Metal	Rectangular	1			6"
3	Chimney	Precast Concrete	Round	1			18"
4	Cone	Precast Concrete	Eccentric	1			40"
5	Base	Precast Concrete	Round	1			35"

Primary Comments: 3 Grade rings, 6" each

Additional Comments:



	PIPE ID
1	17-17A to 17-13
2	17-14 to 17-13
3	17-13 to 17-13A



Line/Connection Comments:

17-17A to 17-13

30.8' INSPECTED, TOO MUCH DEBRIS TO COMPLETE 8/4/17 HOLE IN BOTTOM OF UPSTREAM INVERT

17-14 to 17-13

Inspected 34.9' 7/9/18 Unable to Complete due to debris

17-13 to 17-13A

69.8' Inspected Complete 7/7/18



17-13 Facing South



Pipe #2 Connection

CR NHS STORM DRAIN INSPECTIONS

STORM DRAIN STRUCTURE INSPECTION REPORT

Manhole # **17-17A**

Date, Inspector(s), & Location

Date of Inspection: Friday, August 4, 2017

Inspector(s): Miller, Stroh

General Location:

Pipe Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

	Diameter	Type	In-Effluent	Rim to Invert	Depth of Flow	Fill Depth	Connection Type	Grade Score
1	12"	CPEP	Influent	37"	0"	0"	Grouted	3
2	18"	CMP	Influent	41"	0"	0"	Grouted	3
3	18"	CMP	Effluent	41"	0"	0"	Grouted	3

Structure Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

Overall Structural Condition: 1

Steps: 3, Polyvinyl Coated, score 1

Depth of Sump: 15"

Depth of Debris in Sump: 0" to 6"

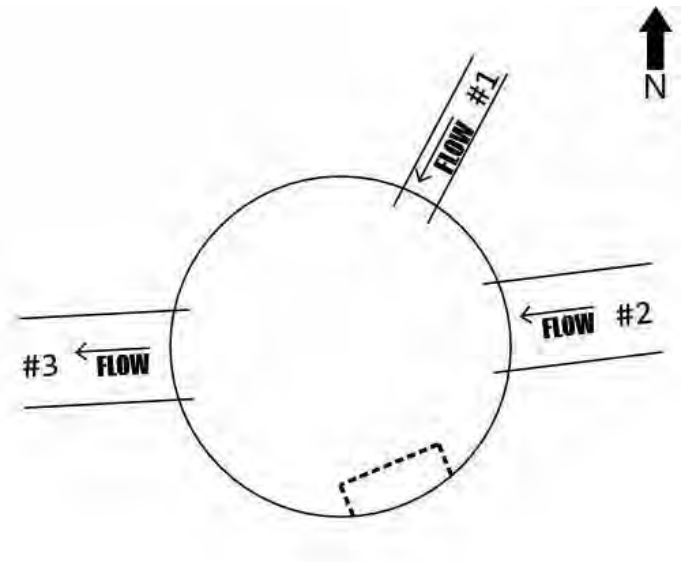
	Component	Material	Geometry	Grade Score	Dim A	Dim B	Height
1	Cover - Standard Cover	Metal	Round	1	25"		
2	Frame	Metal	Round	1			8"
3	Reducing Slab	Precast Concrete	Round	1			8"
4	Base	Precast Concrete	Round	2			38"

Primary Comments: CRACK IN BASE 12:00 TO 2:00

Additional Comments:



PIPE ID	
1	17-17B to 17-17A
2	17-17 to 17-17A
3	17-17A to 17-13



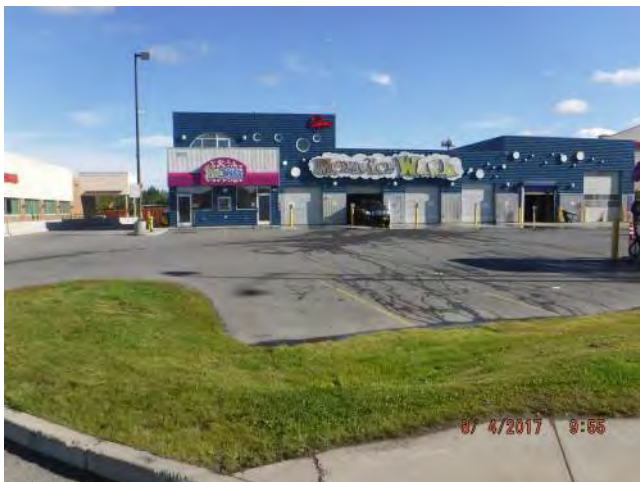
Line/Connection Comments:

17-17 to 17-17A

90.6' INSPECTED COMPLETE 8/4/17

17-17A to 17-13

30.8' INSPECTED, TOO MUCH DEBRIS TO COMPLETE 8/4/17 HOLE IN BOTTOM OF UPSTREAM INVERT



17-17A Facing North



Crack in Base



North is up



Pipe #2 Connection



Pipe #1 Connection



Pipe #3 Connection



Cover

CR NHS STORM DRAIN INSPECTIONS

STORM DRAIN STRUCTURE INSPECTION REPORT

Catch Basin # **17-17**

Date, Inspector(s), & Location

Date of Inspection: Monday, July 9, 2018

Inspector(s): Stratton

General Location: 2195 W DIMOND BLVD

Pipe Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

	Diameter	Type	In-Effluent	Rim to Invert	Depth of Flow	Fill Depth	Connection Type	Grade Score
1			Influent					
2	15"	CMP	Influent					
3	18"	CMP	Effluent					

Structure Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

Overall Structural Condition: 2

Steps: 1, Metal, score 1

Depth of Sump:

Depth of Debris in Sump:

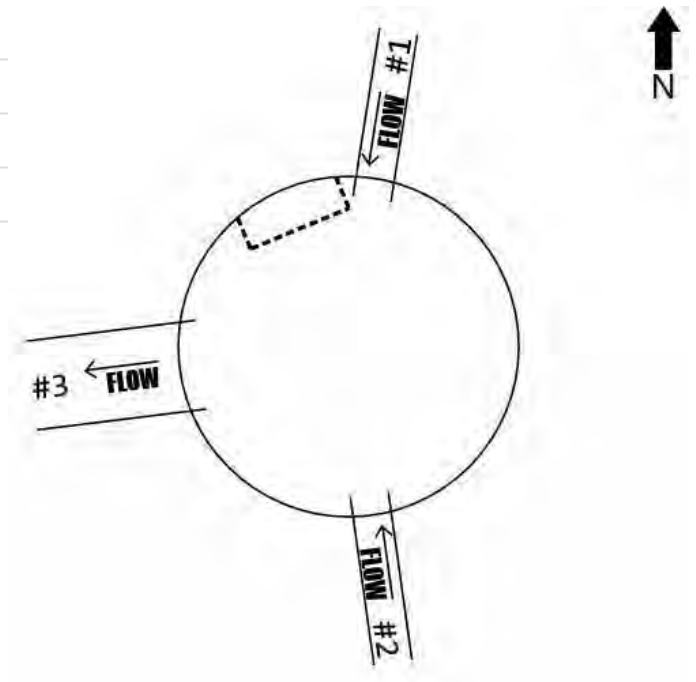
	Component	Material	Geometry	Grade Score	Dim A	Dim B	Height
1	Cover - Standard Cover	Metal	Rectangular	1	22"	18"	
2	Frame	Metal	Rectangular	1			6"
3	Chimney	Precast Concrete	Round	3			10"
4	Reducing Slab	Precast Concrete	Round	1			8"
5	Base	Precast Concrete	Round	1			

Primary Comments: 2 5" Chimneys

Additional Comments:



	PIPE ID
1	to 17-17
2	17-18 to 17-17
3	17-17 to 17-17A



Line/Connection Comments:

17-18 to 17-17

61' Inspected Complete 7/9/18

17-17 to 17-17A

90.6' INSPECTED COMPLETE 8/4/17



17-17 Facing South



17-17 East is Up



South is up



View of Chimney



View of Chimney

CR NHS STORM DRAIN INSPECTIONS

STORM DRAIN STRUCTURE INSPECTION REPORT

Catch Basin # **1367-21**

Date, Inspector(s), & Location

Date of Inspection: Friday, August 4, 2017

Inspector(s): Miller, Stroh

General Location: 1901 W DIMOND BLVD

Pipe Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

	Diameter	Type	In-Effluent	Rim to Invert	Depth of Flow	Fill Depth	Connection Type	Grade Score
1	12"	CMP	Effluent	26"	0"	2"	Grouted	1

Structure Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

Overall Structural Condition: 3

Steps: 0, score N/A

Depth of Sump: 18"

Depth of Debris in Sump: 0" to 6"

	Component	Material	Geometry	Grade Score	Dim A	Dim B	Height
1	Cover - Standard Cover	Metal	Rectangular	1	36"	18"	
2	Frame	Metal	Rectangular	1			5"
3	Chimney	Precast Concrete	Rectangular	4			5"
4	Base	Precast Concrete	Rectangular	1			36"

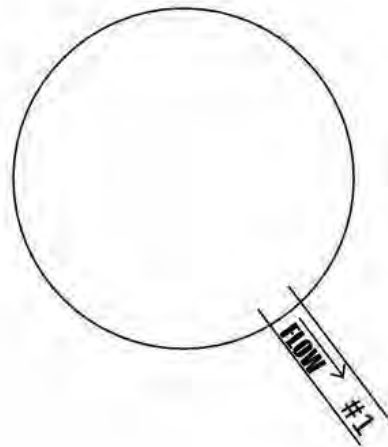
Primary Comments: CHIMNEY DAMAGE

Additional Comments:



PIPE ID

1 1367-21 to 1367-20



Line/Connection Comments:

1367-21 to 1367-20

PIPE APPEARED SOUND, INSPECTED 100.9' COMPLETE 8/4/17



1367-21 Facing North



Cover



North is up



Effluent Pipe

CR NHS STORM DRAIN INSPECTIONS

STORM DRAIN STRUCTURE INSPECTION REPORT

Catchbasin Manhole # 1367-19

Date, Inspector(s), & Location

Date of Inspection: Friday, August 4, 2017

Inspector(s): Stroh

General Location: 1920 W DIMOND BLVD

Pipe Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

	Diameter	Type	In-Effluent	Rim to Invert	Depth of Flow	Fill Depth	Connection Type	Grade Score
1	18"	CMP	Effluent	32"	1"	0"	Grouted	1
2	12"	CMP	Influent	32"	1"	0"	Grouted	1

Structure Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

Overall Structural Condition: 1

Steps: 0, score N/A

Depth of Sump: 12"

Depth of Debris in Sump: 0" to 6"

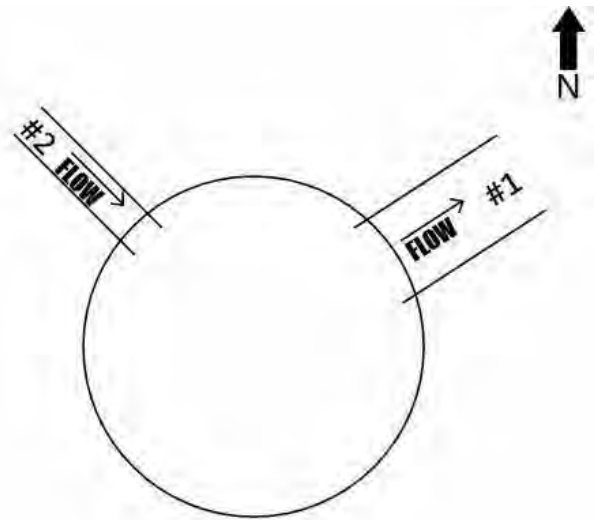
	Component	Material	Geometry	Grade Score	Dim A	Dim B	Height
1	Cover - Standard Cover	Metal	Rectangular	1	37"	26"	
2	Frame	Metal	Rectangular	1			3"
3	Base	Precast Concrete	Rectangular	1			41"

Primary Comments:

Additional Comments:



	PIPE ID
1	1367-19 to 1367-16
2	1367-20 to 1367-19



Line/Connection Comments:

1367-19 to 1367-16

Inspected 198.1' Complete 8/4/17



Northwest is up



Cover



1367-19 Facing North



Northwest is up

CR NHS STORM DRAIN INSPECTIONS

STORM DRAIN STRUCTURE INSPECTION REPORT

Catch Basin # **1367-18**

Date, Inspector(s), & Location

Date of Inspection: Friday, August 4, 2017

Inspector(s): Miller, Stroh

General Location: 1901 W DIMOND BLVD

Pipe Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

	Diameter	Type	In-Effluent	Rim to Invert	Depth of Flow	Fill Depth	Connection Type	Grade Score
1	12"	CMP	Effluent	23"	0"	2"	Grouted	3

Structure Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

Overall Structural Condition: 2

Steps: 0, score N/A

Depth of Sump: 10"

Depth of Debris in Sump: 0" to 6"

	Component	Material	Geometry	Grade Score	Dim A	Dim B	Height
1	Cover - Standard Cover	Metal	Rectangular	1	36"	18"	
2	Frame	Metal	Rectangular	1			6"
3	Chimney	Precast Concrete	Rectangular	3			4"
4	Base	Precast Concrete	Rectangular	1			31"

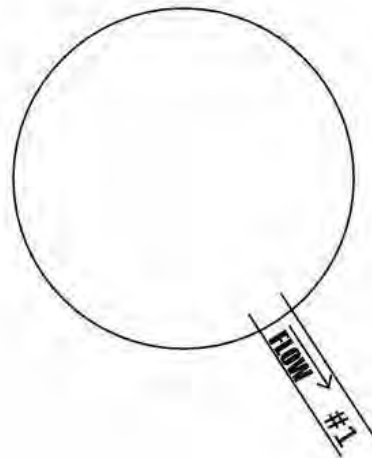
Primary Comments:

Additional Comments:



PIPE ID

1 1367-18 to 1367-17



Line/Connection Comments:

1367-18 to 1367-17

INSPECTED 92.6' COMPLETE 8/4/17



1367-18 Facing North



Southeast is up





Effluent pipe



Cover

CR NHS STORM DRAIN INSPECTIONS

STORM DRAIN STRUCTURE INSPECTION REPORT

Catchbasin Manhole # **1367-16**

Date, Inspector(s), & Location

Date of Inspection: Friday, August 4, 2017

Inspector(s): Stroh

General Location: 1900 W DIMOND BLVD

Pipe Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

	Diameter	Type	In-Effluent	Rim to Invert	Depth of Flow	Fill Depth	Connection Type	Grade Score
1	18"	CMP	Effluent	28"	0"		Grouted	2
2	18"	CMP	Influent	28"	0"		Grouted	2
3	12"	CMP	Influent	28"	0"		Grouted	2

Structure Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

Overall Structural Condition: 1

Steps: 0, score N/A

Depth of Sump: 17"

Depth of Debris in Sump: 6" to 18"

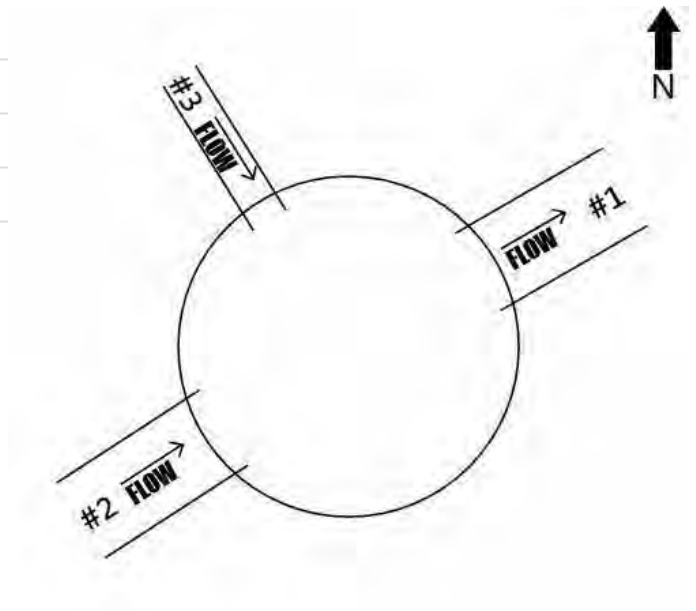
	Component	Material	Geometry	Grade Score	Dim A	Dim B	Height
1	Cover - Standard Cover	Metal	Rectangular	1	37"	26"	
2	Frame	Metal	Rectangular	1			3"
3	Base	Precast Concrete	Rectangular	1			45"

Primary Comments:

Additional Comments:



	PIPE ID
1	1367-16 to 1367-15
2	1367-19 to 1367-16
3	1367-17 to 1367-16



Line/Connection Comments:

1367-16 to 1367-15

Inspected 234.7' Complete 8/4/17

1367-19 to 1367-16

Inspected 198.1' Complete 8/4/17



Pipe #3



Pipe #2



Pipe #1



Southern manhole wall



1367-16 Facing Northwest



Cover

CR NHS STORM DRAIN INSPECTIONS

STORM DRAIN STRUCTURE INSPECTION REPORT

Catch Basin # **1367-23**

Date, Inspector(s), & Location

Date of Inspection: Friday, August 4, 2017

Inspector(s): Miller, Stroh

General Location: 1801 W DIMOND BLVD

Pipe Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

	Diameter	Type	In-Effluent	Rim to Invert	Depth of Flow	Fill Depth	Connection Type	Grade Score
1	18"	CMP	Effluent	23"	0"	0"	Grouted	1

Structure Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

Overall Structural Condition: 1

Steps: 0, score N/A

Depth of Sump: 8"

Depth of Debris in Sump: 0" to 6"

	Component	Material	Geometry	Grade Score	Dim A	Dim B	Height
1	Cover - Standard Cover	Metal	Rectangular	1	36"	18"	
2	Frame	Metal	Rectangular	1			8"
3	Base	Precast Concrete	Rectangular	1			32"

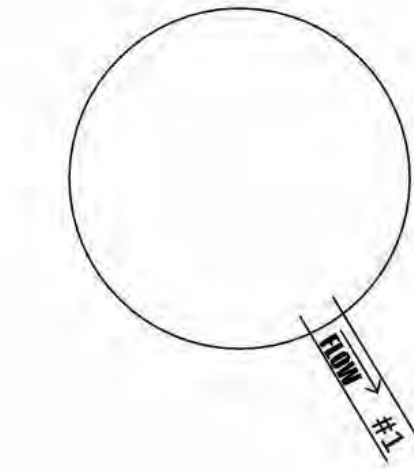
Primary Comments:

Additional Comments:



PIPE ID

1 1367-23 to 1367-22



Line/Connection Comments:

1367-23 to 1367-22

INSPECTED 93' COMPLETE 8/4/17



1367-23 Facing Northwest



Cover





Frame



Base



Effluent Pipe

CR NHS STORM DRAIN INSPECTIONS

STORM DRAIN STRUCTURE INSPECTION REPORT

Catchbasin Manhole # 1367-15

Date, Inspector(s), & Location

Date of Inspection: Friday, August 4, 2017

Inspector(s): Stroh

General Location: 1800 W DIMOND BLVD

Pipe Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

	Diameter	Type	In-Effluent	Rim to Invert	Depth of Flow	Fill Depth	Connection Type	Grade Score
1	18"	CMP	Effluent	57"	0"		Grouted	1
2	18"	CMP	Influent	57"	0"		Grouted	1
3	12"	CMP	Influent	57"	0"		Grouted	1

Structure Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

Overall Structural Condition: 1

Steps: 0, score N/A

Depth of Sump: 15"

Depth of Debris in Sump: 0" to 6"

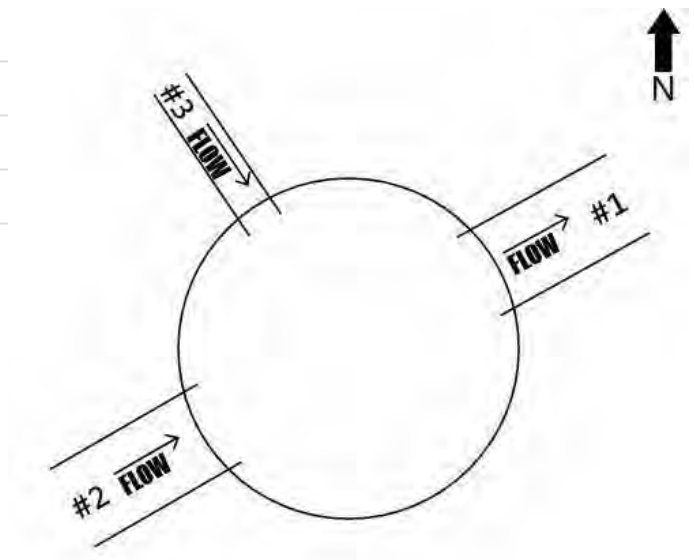
	Component	Material	Geometry	Grade Score	Dim A	Dim B	Height
1	Cover - Standard Cover	Metal	Rectangular	1	37"	26"	
2	Frame	Metal	Rectangular	1			3"
3	Barrel Section	Precast Concrete	Rectangular	1			28"
4	Base	Precast Concrete	Rectangular	1			44"

Primary Comments:

Additional Comments:



	PIPE ID
1	1367-15 to 1367-14
2	1367-16 to 1367-15
3	1367-22 to 1367-15



Line/Connection Comments:

1367-16 to 1367-15

Inspected 234.7' Complete 8/4/17



1367-15 Facing Northwest



Facing Northwest



Pipes #2,3



Pipes #1,3

CR NHS STORM DRAIN INSPECTIONS

STORM DRAIN STRUCTURE INSPECTION REPORT

Catch Basin # **1367-25**

Date, Inspector(s), & Location

Date of Inspection: Friday, August 4, 2017

Inspector(s): Miller, Stroh

General Location: 8985 VERNYE PL

Pipe Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

	Diameter	Type	In-Effluent	Rim to Invert	Depth of Flow	Fill Depth	Connection Type	Grade Score
1	18"	CMP	Effluent	26"	0"	0"	Grouted	1

Structure Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

Overall Structural Condition: 1

Steps: 0, score N/A

Depth of Sump: 9"

Depth of Debris in Sump: 0" to 6"

	Component	Material	Geometry	Grade Score	Dim A	Dim B	Height
1	Cover - Standard Cover	Metal	Rectangular	1	36"	18"	
2	Frame	Metal	Rectangular	1			6"
3	Base	Precast Concrete	Rectangular	1			38"

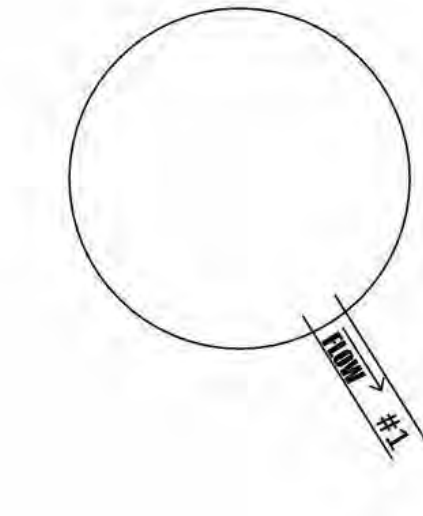
Primary Comments:

Additional Comments:



PIPE ID

1 1367-25 to 1367-24



Line/Connection Comments:

1367-25 to 1367-24

INSPECTED 99.6' COMPLETE 8/4/17



1367-25 Facing Southwest



Cover



Facing Northwest



Facing Northwest



Effluent Pipe

CR NHS STORM DRAIN INSPECTIONS

STORM DRAIN STRUCTURE INSPECTION REPORT

Catchbasin Manhole # **548-17**

Date, Inspector(s), & Location

Date of Inspection: Tuesday, July 25, 2017

Inspector(s): Miller, Stroh

General Location: 1200 W DIMOND BLVD

Pipe Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

	Diameter	Type	In-Effluent	Rim to Invert	Depth of Flow	Fill Depth	Connection Type	Grade Score
1	18"	CMP	Effluent	82"	0"	0"	Grouted	1
2	18"	CMP	Influent	82"	0"	0"	Grouted	1
3	18"	CMP	Influent	82"	0"	0"	Grouted	1
4	18"	CMP	Influent	82"	0"	0"	Grouted	1

Structure Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

Overall Structural Condition: 1

Steps: 5, Metal, score 1

Depth of Sump: 9"

Depth of Debris in Sump: 6" to 18"

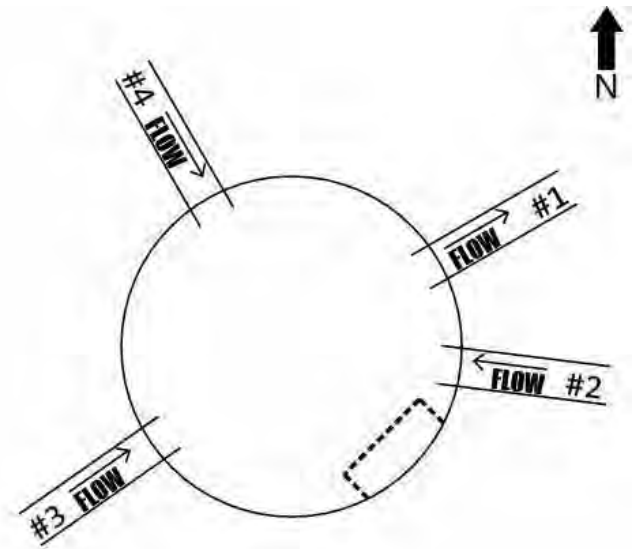
	Component	Material	Geometry	Grade Score	Dim A	Dim B	Height
1	Cover - Standard Cover	Metal	Rectangular	1	22"	18"	
2	Frame	Metal	Rectangular	1			6"
3	Chimney	Precast Concrete	Round	1			4"
4	Chimney	Precast Concrete	Round	1			6"
5	Cone	Precast Concrete	Eccentric	1			40"
6	Base	Precast Concrete	Round	1			34"

Primary Comments:

Additional Comments:



	PIPE ID
1	548-17 to 548-15
2	548-18 to 548-17
3	548-20 to 548-17
4	548-19 to 548-17



Line/Connection Comments:

548-17 to 548-15

128.7FT CCTV on 7/31/17. complete. pipe was half full of debris and required cleaning to inspect

548-18 to 548-17

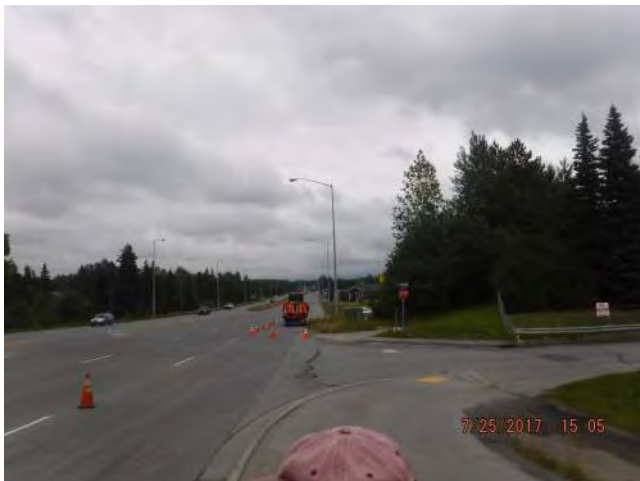
Attempted inspection, too much debris 7/25/17

548-20 to 548-17

169.8' Inspected 7/25/17

548-19 to 548-17

102.3' Inspected 7/25/17



548-17 Facing Northeast



Facing Northwest



Facing Northwest



Cover

CR NHS STORM DRAIN INSPECTIONS

STORM DRAIN STRUCTURE INSPECTION REPORT

Catchbasin Manhole # 548-15

Date, Inspector(s), & Location

Date of Inspection:

Inspector(s): Stroh, Gastrock

General Location: 1200 W DIMOND BLVD

Pipe Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

	Diameter	Type	In-Effluent	Rim to Invert	Depth of Flow	Fill Depth	Connection Type	Grade Score
1	30"	CMP	Effluent	120"				
2	18"	CMP	Influent	119"	9"		Grouted	2
3	18"	CMP	Influent	66"			Grouted	

Structure Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

Overall Structural Condition: 2

Steps: 7, Metal, score 1

Depth of Sump: 10"

Depth of Debris in Sump: 0" to 6"

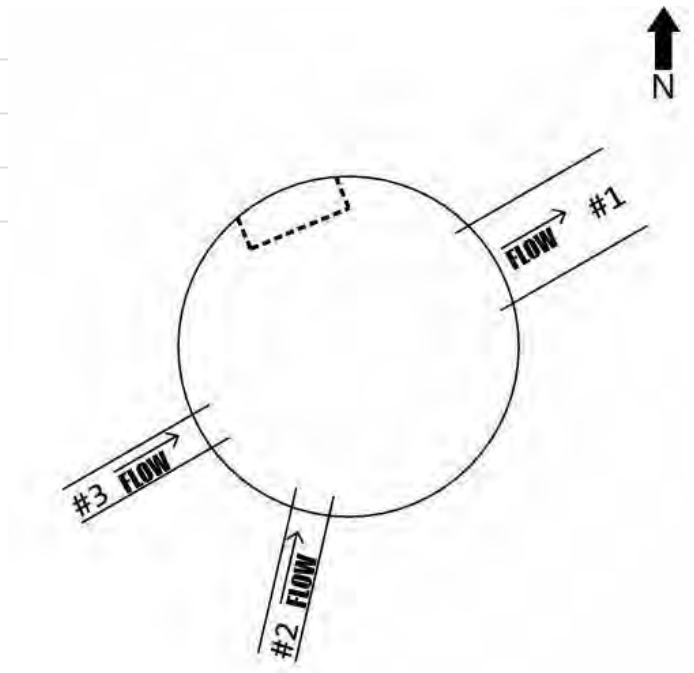
	Component	Material	Geometry	Grade Score	Dim A	Dim B	Height
1	Cover - Mountable Curb Inlet	Metal	Rectangular	1	22"	18"	6"
2	Frame	Metal	Rectangular	2			6"
3	Chimney	Precast Concrete	Round	1			10"
4	Reducing Slab	Precast Concrete	Round	1			9"
5	Barrel Section	Precast Concrete	Round	1			72"
6	Base	Precast Concrete	Round	1			30"

Primary Comments:

Additional Comments:



	PIPE ID
1	548-15 to 548-14
2	548-15A to 548-15
3	548-17 to 548-15



Line/Connection Comments:

548-15 to 548-14

147 feet completed 7/31/17

548-15A to 548-15

HOLE AT 6OCLOCK POSITION JUST OUTSIDE MANHOLE. DEFLECTION AT 16 FT. HAD TO Abandon at 16ft due to debris in pipe

548-17 to 548-15

128.7FT CCTV on 7/31/17. complete. pipe was half full of debris and required cleaning to inspect



548-15 Facing South



Northwest is up



Facing North



Frame and Chimneys

CR NHS STORM DRAIN INSPECTIONS

STORM DRAIN STRUCTURE INSPECTION REPORT

Catchbasin Manhole # **548-14**

Date, Inspector(s), & Location

Date of Inspection: Monday, July 31, 2017

Inspector(s): Stroh, Gastrock

General Location:

Pipe Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

	Diameter	Type	In-Effluent	Rim to Invert	Depth of Flow	Fill Depth	Connection Type	Grade Score
1	30"	CMP	Effluent	95"	0"	0"	Grouted	2
2	30"	CMP	Influent	95"	0"	0"	Grouted	2
3	18"	CMP	Influent	87"	0"	0"	Grouted	2

Structure Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

Overall Structural Condition: 2

Steps: 6, Metal, score 1

Depth of Sump:

Depth of Debris in Sump: 6" to 18"

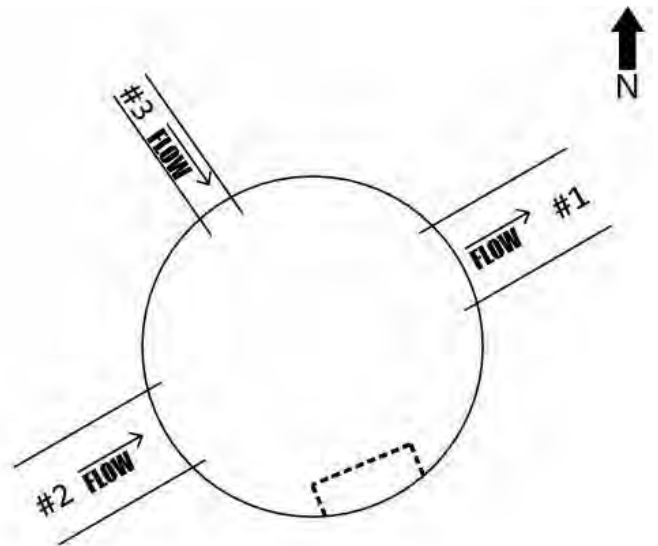
	Component	Material	Geometry	Grade Score	Dim A	Dim B	Height
1	Cover - Standard Cover	Metal	Rectangular	1	22"	18"	
2	Frame	Metal	Round	2			6"
3	Chimney	Precast Concrete	Round	2			10"
4	Cone	Precast Concrete	Eccentric	2			28"
5	Barrel Section	Precast Concrete	Round	2	48"		24"
6	Base	Precast Concrete	Round	2			23"

Primary Comments: entered structure and tapped inverts of pipe with rock hammer. all pipes appeared sound.

Additional Comments: top grade ring has multiple cracks



	PIPE ID
1	548-14 to 548-13
2	548-15 to 548-14
3	548-22 to 548-14



Line/Connection Comments:

548-14 to 548-13

141 ft completed 7/31/17

548-15 to 548-14

147 feet completed 7/31/17

548-22 to 548-14

unable to drive camera through. joint deflection with intruding cmp prevented camera 3 ft in from proceeding



548-14 Facing Northwest



Pipe #3 Connection



Pipe #1 Connection



Pipe #2 Connection



Chimney



Chimney



Northwest Up



Northwest is up

CR NHS STORM DRAIN INSPECTIONS

STORM DRAIN STRUCTURE INSPECTION REPORT

Catchbasin Manhole # 548-9

Date, Inspector(s), & Location

Date of Inspection: Monday, July 31, 2017

Inspector(s): Stroh, Gastrock

General Location:

Pipe Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

	Diameter	Type	In-Effluent	Rim to Invert	Depth of Flow	Fill Depth	Connection Type	Grade Score
1	48"	CMP	Influent	72"	2"	0"		
2	10"	CPEP	Influent	66"			Grouted	4
3	15"	CMP	Influent	45"				
4	48"	CMP	Effluent	72"				
5	18"	CMP	Influent		0"			

Structure Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

Overall Structural Condition: 2

Steps: 2, Metal, score 1

Depth of Sump: 24"

Depth of Debris in Sump: 0" to 6"

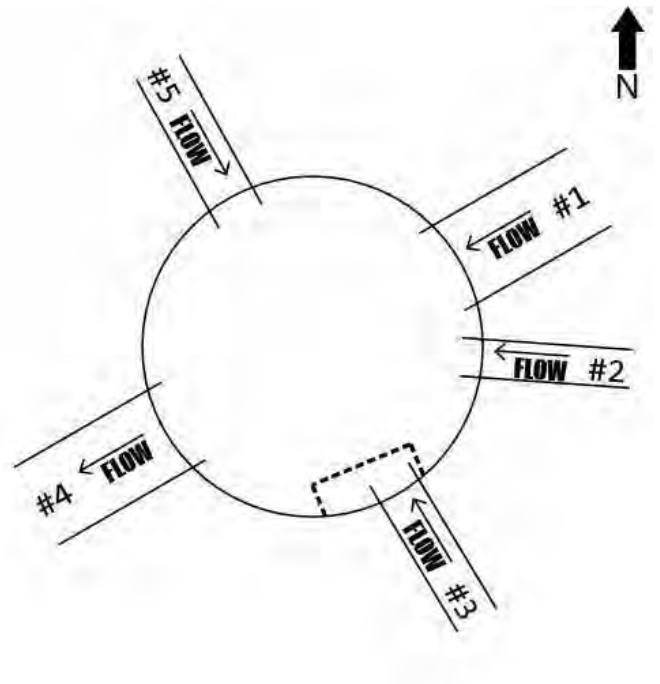
	Component	Material	Geometry	Grade Score	Dim A	Dim B	Height
1	Cover - Mountable Curb Inlet	Metal	Rectangular	1	22"	18"	
2	Frame	Metal	Rectangular	2			6"
3	Chimney	Precast Concrete	Round	2			6"
4	Reducing Slab	Precast Concrete	Round	1			11"
5	Base	Precast Concrete	Round	1	72"		62"

Primary Comments: two additional lines

Additional Comments:



	PIPE ID
1	548-8 to 548-9
2	548-9B to 548-9
3	548-9A to 548-9
4	548-9 to 548-13
5	548-10 to 548-9



Line/Connection Comments:

548-8 to 548-9

10% ovality at 137 ft from 548-9. 181ft from 548-9 has 1inch pipe through cmp at 1oclock position
264ft completed 7/31/17

548-9 to 548-13

178.3 ft completed 7/31/17

548-10 to 548-9

84.8 ft completed 7/31/17. 3to5 inches of debris at upsream structure



548-9 Facing Northwest



Northwest is up



Pipe #3 Connection



Pipe #2 Connection

CR NHS STORM DRAIN INSPECTIONS

STORM DRAIN STRUCTURE INSPECTION REPORT

Catchbasin Manhole # **548-8**

Date, Inspector(s), & Location

Date of Inspection: Monday, July 31, 2017

Inspector(s): Stroh, Gastrock

General Location: 1100 W DIMOND BLVD

Pipe Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

	Diameter	Type	In-Effluent	Rim to Invert	Depth of Flow	Fill Depth	Connection Type	Grade Score
1	36"	CMP	Influent	70"				
2	48"	CMP	Effluent	70"	2"	0"		
3	18"	CMP	Influent					

Structure Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

Overall Structural Condition: 2

Steps: 4, Metal, score 1

Depth of Sump: 12"

Depth of Debris in Sump: 0" to 6"

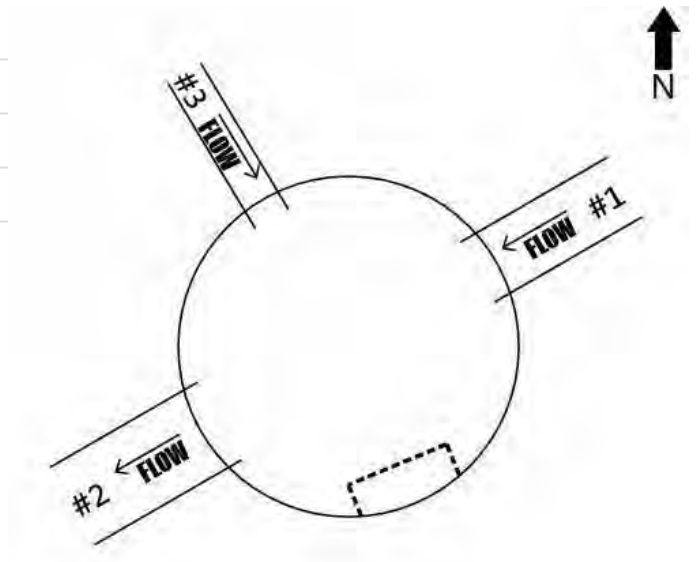
	Component	Material	Geometry	Grade Score	Dim A	Dim B	Height
1	Cover - Mountable Curb Inlet	Metal	Rectangular	1	22"	18"	
2	Frame	Metal	Rectangular	2			6"
3	Chimney	Precast Concrete	Round	2			4"
4	Reducing Slab	Precast Concrete	Round	1			11"
5	Base	Precast Concrete	Round	2	72"		50"

Primary Comments: pipe connections and chimney are missing grout

Additional Comments:



	PIPE ID
1	548-23 to 548-8
2	548-8 to 548-9
3	548-11 to 548-8



Line/Connection Comments:

548-23 to 548-8

236 FT completed on 7/31/17

548-8 to 548-9

10% ovality at 137 ft from 548-9. 181ft from 548-9 has 1inch pipe through cmp at 1oclock position
264ft completed 7/31/17

548-11 to 548-8

76.8ft inspected. unable to tv last 5feet due to debris



548-8 Facing Northwest



Chimneys and Frame, Facing Northwest



Chimneys and Frame, Facing Southwest



Chimneys and Frame, Facing Southeast

CR NHS STORM DRAIN INSPECTIONS

STORM DRAIN STRUCTURE INSPECTION REPORT

Catchbasin Manhole # **548-23**

Date, Inspector(s), & Location

Date of Inspection: Monday, July 31, 2017

Inspector(s): Stroh, Gastrock

General Location:

Pipe Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

	Diameter	Type	In-Effluent	Rim to Invert	Depth of Flow	Fill Depth	Connection Type	Grade Score
1	36"	CMP	Influent	70"				
2	36"	CMP	Effluent	70"				
3	18"	CMP	Influent		0"	3"		

Structure Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

Overall Structural Condition: 2

Steps: 4, Metal, score 1

Depth of Sump: 12"

Depth of Debris in Sump: 0" to 6"

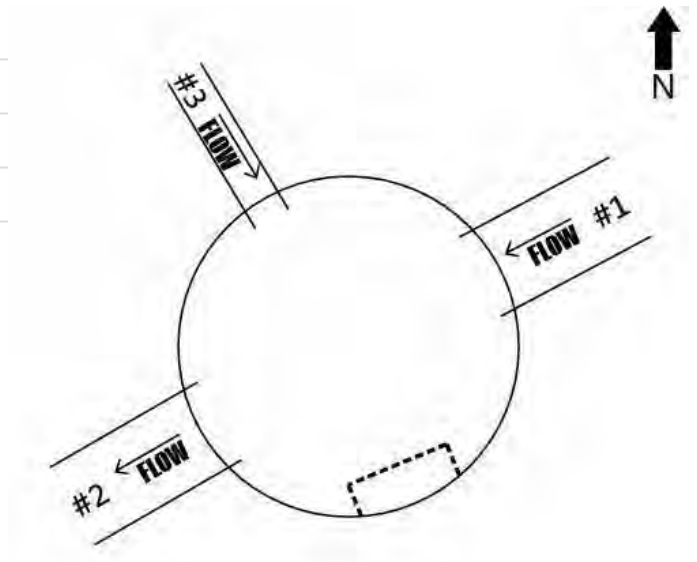
	Component	Material	Geometry	Grade Score	Dim A	Dim B	Height
1	Cover - Mountable Curb Inlet	Metal	Round	1	22"	18"	
2	Frame	Metal	Round	1			6"
3	Chimney	Precast Concrete	Round	2			11"
4	Reducing Slab	Precast Concrete	Round	1			8"
5	Base	Precast Concrete	Round	2			

Primary Comments: 82 in total height

Additional Comments: circumferential crack in base at top of pipe penetrations



	PIPE ID
1	548-25 to 548-23
2	548-23 to 548-8
3	548-24 to 548-23



Line/Connection Comments:

548-25 to 548-23

262.4 ft completed 7/31/17

548-23 to 548-8

236 FT completed on 7/31/17

548-24 to 548-23

86.8 feet completed 7/31/17



548-23 Facing Northwest



Frame and Chimney, Northwest is up



Frame and Chimney, Northeast is up



Southeast is up



Southwest is up



Southwest is up

CR NHS STORM DRAIN INSPECTIONS

STORM DRAIN STRUCTURE INSPECTION REPORT

Catchbasin Manhole # 548-25

Date, Inspector(s), & Location

Date of Inspection: Monday, July 31, 2017

Inspector(s): Stroh, Gastrock

General Location:

Pipe Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

	Diameter	Type	In-Effluent	Rim to Invert	Depth of Flow	Fill Depth	Connection Type	Grade Score
1	36"	CMP	Influent	76"				
2	36"	CMP	Effluent	76"				
3	18"	CMP	Influent		0"	5"		

Structure Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

Overall Structural Condition: 2

Steps: 4, Metal, score 1

Depth of Sump: 12"

Depth of Debris in Sump: 0" to 6"

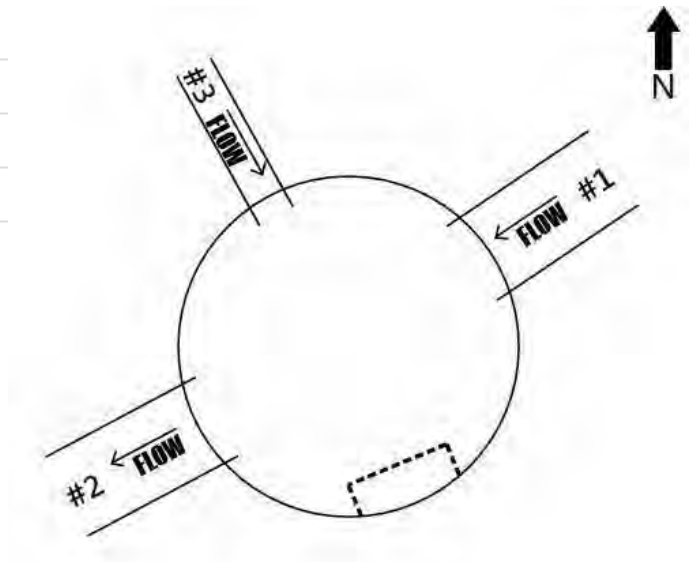
	Component	Material	Geometry	Grade Score	Dim A	Dim B	Height
1	Cover - Mountable Curb Inlet	Metal	Rectangular	1	22"	18"	
2	Frame	Metal	Rectangular	1			6"
3	Chimney	Precast Concrete	Round	2			16"
4	Reducing Slab	Precast Concrete	Round	1			9"
5	Base	Precast Concrete	Round	1	72"		65"

Primary Comments:

Additional Comments:



	PIPE ID
1	548-27 to 548-25
2	548-25 to 548-23
3	548-26 to 548-25



Line/Connection Comments:

548-27 to 548-25

horizontal deflection aat 21 ft. multiple deflections at joints, to the right 150.8 ft completed 7/31/17

548-25 to 548-23

262.4 ft completed 7/31/17



548-25 Facing Southwest



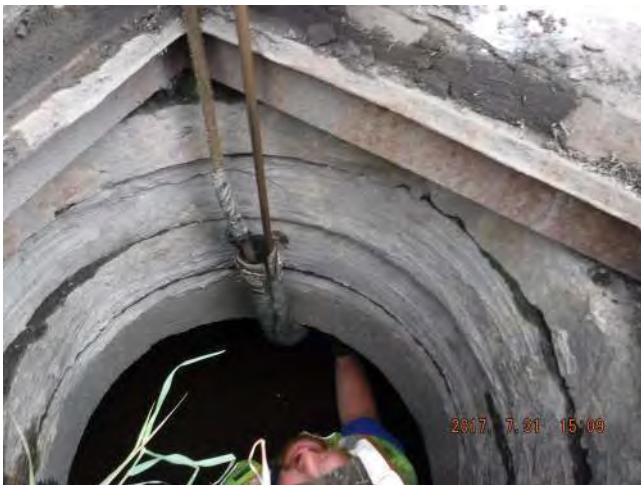
Northwest is up



Facing Southwest



Facing Southeast



Frame and Chimneys

CR NHS STORM DRAIN INSPECTIONS

STORM DRAIN STRUCTURE INSPECTION REPORT

Catchbasin Manhole # **548-27**

Date, Inspector(s), & Location

Date of Inspection: Tuesday, August 1, 2017

Inspector(s): Stroh, Gastrock

General Location: 920 W DIMOND BLVD

Pipe Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

	Diameter	Type	In-Effluent	Rim to Invert	Depth of Flow	Fill Depth	Connection Type	Grade Score
1	36"	CMP	Influent	75"			Grouted	1
2	18"	CMP	Influent	64"			Grouted	1
3	36"	CMP	Effluent	75"			Grouted	1

Structure Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

Overall Structural Condition: 2

Steps: 5, Metal, score 1

Depth of Sump: 12"

Depth of Debris in Sump: 0" to 6"

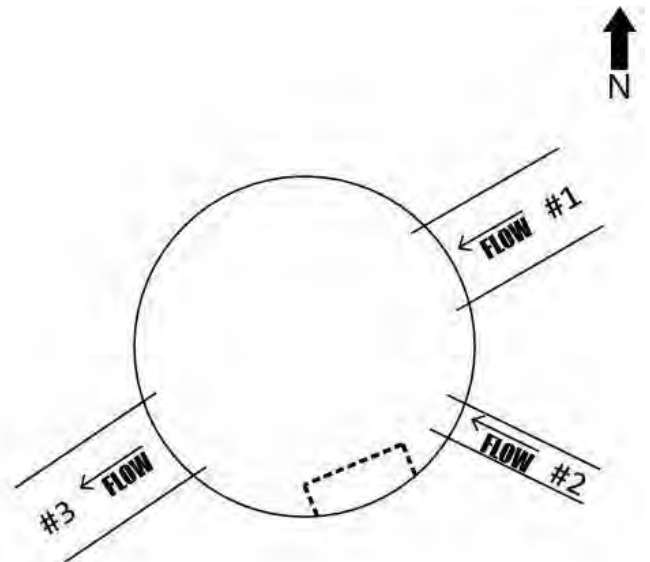
	Component	Material	Geometry	Grade Score	Dim A	Dim B	Height
1	Cover - Mountable Curb Inlet	Metal	Rectangular	1	22"	18"	
2	Frame	Metal	Rectangular	3			6"
3	Chimney	Precast Concrete	Round	2			2"
4	Reducing Slab	Precast Concrete	Round	1			8"
5	Barrel Section	Precast Concrete	Round	1			12"
6	Reducing Slab	Precast Concrete	Round	1			5"
7	Base	Precast Concrete	Round	1			68"

Primary Comments:

Additional Comments:



	PIPE ID
1	548-28 to 548-27
2	548-265 to 548-27
3	548-27 to 548-25



Line/Connection Comments:

548-28 to 548-27

82.0 ft completed 8/1/17

548-265 to 548-27

too much debris to cctv. did not clean. used zoom on cctv since line is short 1.7ft cctv 8/1/17

548-27 to 548-25

horizontal deflection aat 21 ft. multiple deflections at joints, to the right 150.8 ft completed 7/31/17



548-27 Facing South



Facing Northwest



Facing West



Facing Southwest



Effluent Pipe



Steps

CR NHS STORM DRAIN INSPECTIONS

STORM DRAIN STRUCTURE INSPECTION REPORT

Catchbasin Manhole # **548-28**

Date, Inspector(s), & Location

Date of Inspection: Tuesday, August 1, 2017

Inspector(s): Stroh

General Location: 900 W DIMOND BLVD

Pipe Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

	Diameter	Type	In-Effluent	Rim to Invert	Depth of Flow	Fill Depth	Connection Type	Grade Score
1	36"	CMP	Influent	84"	2"	0"	Grouted	1
2	36"	CMP	Effluent	84"	2"	0"	Grouted	1
3	18"	CMP	Influent	70"	0"	6"		

Structure Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

Overall Structural Condition: 3

Steps: 5, Metal, score 1

Depth of Sump: 12"

Depth of Debris in Sump: 0" to 6"

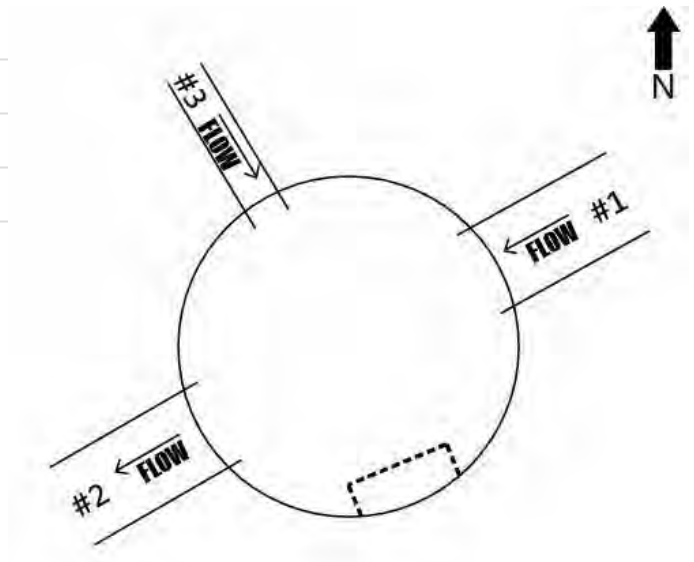
	Component	Material	Geometry	Grade Score	Dim A	Dim B	Height
1	Cover - Mountable Curb Inlet	Metal	Rectangular	1	22"	18"	
2	Frame	Metal	Rectangular	1			6"
3	Chimney	Precast Concrete	Round	4			4"
4	Reducing Slab	Precast Concrete	Round	1			9"
5	Barrel Section	Precast Concrete	Round	1	72"		6"
6	Barrel Section	Precast Concrete	Round	1	72"		12"
7	Base	Precast Concrete	Round	1	72"		60"

Primary Comments:

Additional Comments:



	PIPE ID
1	548-30 to 548-28
2	548-28 to 548-27
3	548-29 to 548-28



Line/Connection Comments:

548-30 to 548-28

245.4 ft completed 8/1/17

548-28 to 548-27

82.0 ft completed 8/1/17

548-29 to 548-28

completed 27 feet.



Chimney facing South



Facing Southwest



Facing Northeast



36" influent pipe



36" effluent pipe



548-28 Facing Northwest



Northwest is up

CR NHS STORM DRAIN INSPECTIONS

STORM DRAIN STRUCTURE INSPECTION REPORT

Catchbasin Manhole # **548-30**

Date, Inspector(s), & Location

Date of Inspection: Tuesday, August 1, 2017

Inspector(s): Stroh, Gastrock

General Location: 750 W DIMOND BLVD

Pipe Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

	Diameter	Type	In-Effluent	Rim to Invert	Depth of Flow	Fill Depth	Connection Type	Grade Score
1	12"	Other (See Comment)	Influent		0"		Grouted	
2	36"	CMP	Influent	81"				
3			Influent					
4	36"	CMP	Effluent	82"	2"	0"		
5	18"	CMP	Influent		0"	4"	Grouted	1

Structure Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

Overall Structural Condition: 3

Steps: 3, Metal, score 2

Depth of Sump: 12"

Depth of Debris in Sump: 0" to 6"

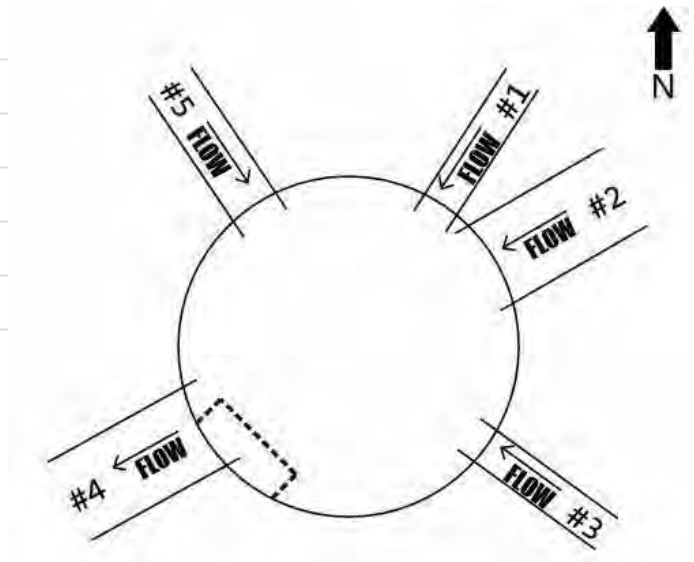
	Component	Material	Geometry	Grade Score	Dim A	Dim B	Height
1	Cover - Mountable Curb Inlet	Metal	Rectangular	1	22"	18"	
2	Frame	Metal	Rectangular	1			6"
3	Chimney	Precast Concrete	Round	2			14"
4	Reducing Slab	Precast Concrete	Round	1			9"
5	Base	Precast Concrete	Round	3	72"		62"

Primary Comments: circumferential crack in base at pipe connections.

Additional Comments:



	PIPE ID
1	548-31 to 548-30
2	548-31 to 548-30
3	to 548-30
4	548-30 to 548-28
5	548-264 to 548-30



Line/Connection Comments:

548-31 to 548-30

perforated pipe

548-31 to 548-30

304 ft completed 8/1/17

548-30 to 548-28

245.4 ft completed 8/1/17

548-264 to 548-30

debris at downstream end. tapered off 10 ft from manhole. corrosion about 5 ft from upstream structure. 98.6 ft completed 8/1/17



548-30 Facing Northwest



Facing Southwest



Facing Southwest



Facing West



Facing South



Facing West



Facing Northwest

CR NHS STORM DRAIN INSPECTIONS

STORM DRAIN STRUCTURE INSPECTION REPORT

Catchbasin Manhole # **548-31**

Date, Inspector(s), & Location

Date of Inspection: Tuesday, August 1, 2017

Inspector(s): Stroh, Gastrock

General Location: 750 W DIMOND BLVD

Pipe Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

	Diameter	Type	In-Effluent	Rim to Invert	Depth of Flow	Fill Depth	Connection Type	Grade Score
1	12"	Other (See Comment)	Influent	65"	0"	0"	Grouted	2
2	36"	CMP	Influent	79"	2"	0"	Grouted	3
3	12"	CMP	Influent	68"	0"	0"	Grouted	2
4	36"	CMP	Effluent	79"	2"	0"	Grouted	2
5	12"	Other (See Comment)	Effluent	65"	0"	0"	Grouted	2
6	18"	CMP	Influent	72"	0"	0"	Grouted	2

Structure Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

Overall Structural Condition: 3

Steps: 4, Metal, score 1

Depth of Sump: 18"

Depth of Debris in Sump: 6" to 18"

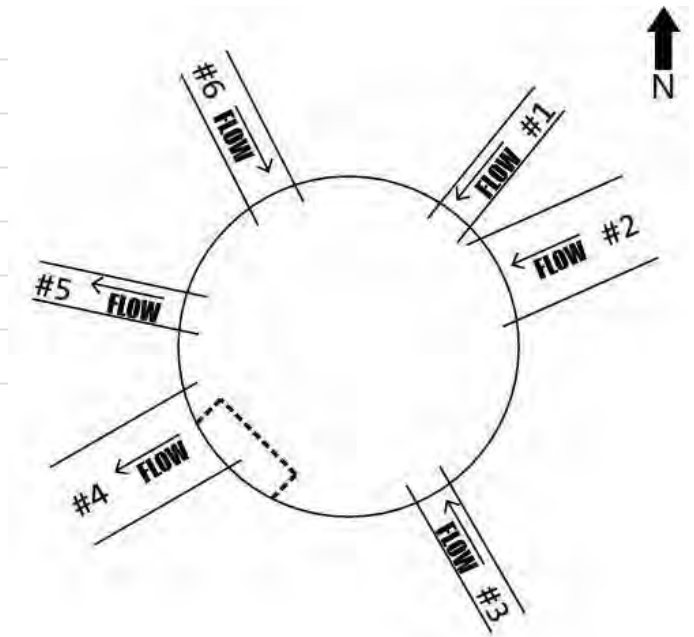
	Component	Material	Geometry	Grade Score	Dim A	Dim B	Height
1	Cover - Mountable Curb Inlet	Metal	Rectangular	1	22"	18"	
2	Frame	Metal	Rectangular	1			6"
3	Chimney	Precast Concrete	Round	2			12"
4	Reducing Slab	Precast Concrete	Round	1			8"
5	Base	Precast Concrete	Round	3	72"		66"

Primary Comments: CIRCUMFERENTIAL CRACK IN BASE AT PIPE connections

Additional Comments:



	PIPE ID
1	548-32 to 548-31
2	548-32 to 548-31
3	548-31A to 548-31
4	548-31 to 548-30
5	548-31 to 548-30
6	548-263 to 548-31



Line/Connection Comments:

548-32 to 548-31

perforated pipe 164.5 feet upstream on 8/1/17. unable to complete due to debris. set up on upstream manhole and completed downstream 5feet on 8/2/17

548-32 to 548-31

hole at 7 oclock 75 ft from 548-31.

548-31A to 548-31

6.6ft completed 8/1/17

548-31 to 548-30

304 ft completed 8/1/17

548-31 to 548-30

perforated pipe

548-263 to 548-31

corrosion last five feet before upstream struucture 60.0feet completed 8/1/17



Pipe #3



Frame and Chimney



548-31 Facing Northwest



Pipe #5



Pipe #6



Pipes #6,1, Crack in Base



Crack in Base

CR NHS STORM DRAIN INSPECTIONS

STORM DRAIN STRUCTURE INSPECTION REPORT

OGS # **548-31A**

Date, Inspector(s), & Location

Date of Inspection: Tuesday, August 1, 2017

Inspector(s): Stroh

General Location:

Pipe Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

	Diameter	Type	In-Effluent	Rim to Invert	Depth of Flow	Fill Depth	Connection Type	Grade Score
1			Influent					
2	12"	CMP	Effluent		0"		Grouted	1

Structure Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

Overall Structural Condition: 1

Steps: N/A

Depth of Sump:

Depth of Debris in Sump:

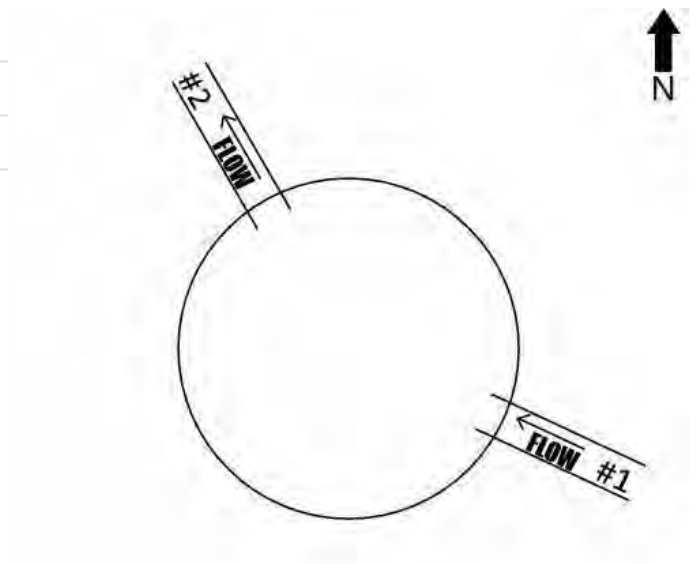
Component	Material	Geometry	Grade Score	Dim A	Dim B	Height
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Primary Comments: small ogs for parking lot runoff

Additional Comments:



PIPE ID	
1	to 548-31A
2	548-31A to 548-31



Line/Connection Comments:

548-31A to 548-31

6.6ft completed 8/1/17



548-31A Northwest is up



Frame



OGS

CR NHS STORM DRAIN INSPECTIONS

STORM DRAIN STRUCTURE INSPECTION REPORT

Catch Basin # **548-32**

Date, Inspector(s), & Location

Date of Inspection: Wednesday, August 2, 2017

Inspector(s): Stroh, Gastrock

General Location: 720 W DIMOND BLVD

Pipe Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

	Diameter	Type	In-Effluent	Rim to Invert	Depth of Flow	Fill Depth	Connection Type	Grade Score
1	12"	Other (See Comment)	Influent		0"	5"	Grouted	
2	24"	CMP	Influent				Grouted	
3	30"	CMP	Influent	80"				
4	36"	CMP	Effluent	80"	2"	0"	Grouted	
5	12"	Other (See Comment)	Effluent		0"		Grouted	

Structure Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

Overall Structural Condition: 3

Steps: 4, Metal, score 1

Depth of Sump: 20"

Depth of Debris in Sump:

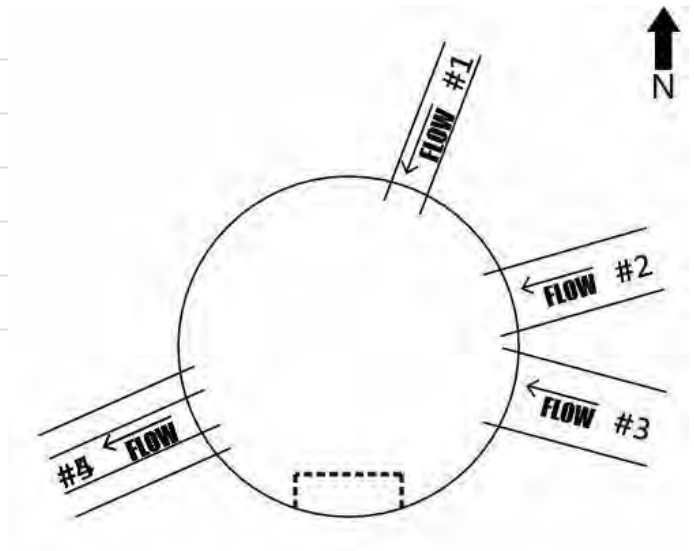
	Component	Material	Geometry	Grade Score	Dim A	Dim B	Height
1	Cover - Mountable Curb Inlet	Metal	Rectangular	1	22"	18"	
2	Frame	Metal	Rectangular	1			6"
3	Chimney	Precast Concrete	Round	3			16"
4	Reducing Slab	Precast Concrete	Round	2			9"
5	Base	Precast Concrete	Round	3	72"		70"

Primary Comments: circumferential crack in base at pipe connections, offset frame

Additional Comments:



	PIPE ID
1	548-253 to 548-32
2	548-253 to 548-32
3	548-33 to 548-32
4	548-32 to 548-31
5	548-32 to 548-31



Line/Connection Comments:

548-253 to 548-32

perforated pipe. abandoned survey due to depth of debris

548-253 to 548-32

holes in inver and springline 9 ft from upstream manhole

548-33 to 548-32

multiple deformations. one sag. 71.3 feet completed 8/2/17.

548-32 to 548-31

hole at 7 oclock 75 ft from 548-31.

548-32 to 548-31

perforated pipe 164.5 feet upstream on 8/1/17. unable to complete due to debris. set up on upstream manhole and completed downstream 5feet on 8/2/17



548-32 Facing Northwest



Chimney



Pipe #5



Pipe #1



Pipe #2



Pipe #3

CR NHS STORM DRAIN INSPECTIONS

STORM DRAIN STRUCTURE INSPECTION REPORT

Catchbasin Manhole # **548-33**

Date, Inspector(s), & Location

Date of Inspection: Wednesday, August 2, 2017

Inspector(s): Stroh, Gastrock

General Location: 720 W DIMOND BLVD

Pipe Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

	Diameter	Type	In-Effluent	Rim to Invert	Depth of Flow	Fill Depth	Connection Type	Grade Score
1			Influent					
2	30"	CMP	Effluent	63"			Grouted	1

Structure Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

Overall Structural Condition: 2

Steps: 3, Metal, score 0

Depth of Sump: 18"

Depth of Debris in Sump: 0" to 6"

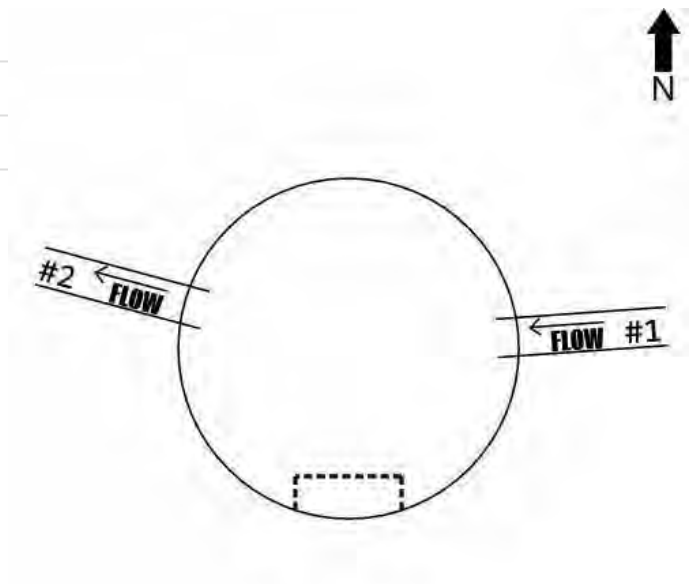
	Component	Material	Geometry	Grade Score	Dim A	Dim B	Height
1	Cover - Mountable Curb Inlet	Metal	Rectangular	1	22"	18"	
2	Frame	Metal	Rectangular	1			6"
3	Chimney	Precast Concrete	Round	2			12"
4	Reducing Slab	Precast Concrete	Round	2			9"
5	Barrel Section	Precast Concrete	Round	2	48"		24"
6	Base	Precast Concrete	Round	2	48"		24"

Primary Comments:

Additional Comments:



PIPE ID	
1	548-34 to 548-33
2	548-33 to 548-32



Line/Connection Comments:

548-33 to 548-32

multiple deformations. one sag. 71.3 feet completed 8/2/17.



548-33 Facing North



Facing West



Chimney and Frame, SW



Chimney and Frame, S



Chimney and Frame, NE



Northwest is up

CR NHS STORM DRAIN INSPECTIONS

STORM DRAIN STRUCTURE INSPECTION REPORT

Catchbasin Manhole # **548-256**

Date, Inspector(s), & Location

Date of Inspection:

Inspector(s): Miller, Stroh

General Location: 8301 ARCTIC BLVD

Pipe Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

	Diameter	Type	In-Effluent	Rim to Invert	Depth of Flow	Fill Depth	Connection Type	Grade Score
1	12"	CMP	Influent	104"			Grouted	1
2	18"	CMP	Effluent	126"			Grouted	1
3	18"	CMP	Influent	126"			Grouted	1

Structure Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

Overall Structural Condition: 1

Steps: 8, Metal, score 1

Depth of Sump: 6"

Depth of Debris in Sump: 0" to 6"

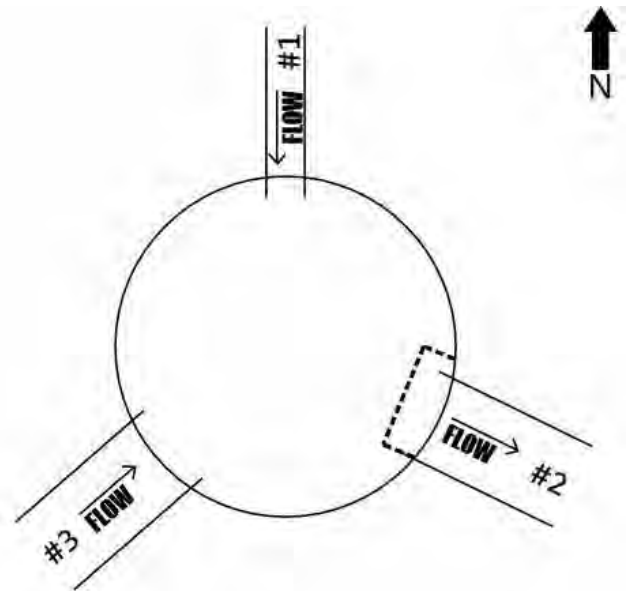
	Component	Material	Geometry	Grade Score	Dim A	Dim B	Height
1	Cover - Standard Cover	Metal	Rectangular	1	22"	18"	
2	Frame	Metal	Rectangular	1	22"	18"	6"
3	Chimney	Precast Concrete	Rectangular	1			6"
4	Cone	Precast Concrete	Eccentric	1			40"
5	Barrel Section	Precast Concrete	Round	1			36"
6	Base	Precast Concrete	Round	1			30"

Primary Comments:

Additional Comments:



PIPE ID	
1	to 548-256
2	548-256 to 548-255
3	548-257 to 548-256



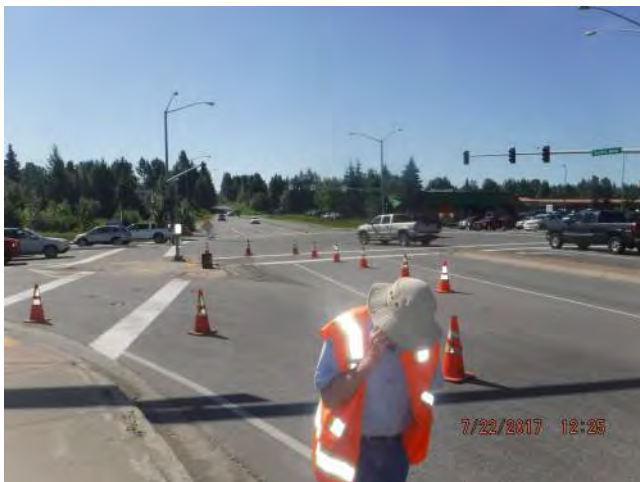
Line/Connection Comments:

548-256 to 548-255

INSPECTED 38.3' 7/22/17

548-257 to 548-256

INSPECTED 29.2' UNTIL BLOCKED BY DEFECT 7/22/17



548-256 Facing South



Cover



North is up



North is up

CR NHS STORM DRAIN INSPECTIONS

STORM DRAIN STRUCTURE INSPECTION REPORT

Catch Basin # **548-254**

Date, Inspector(s), & Location

Date of Inspection: Saturday, July 22, 2017

Inspector(s): Miller, Stroh

General Location: 8301 ARCTIC BLVD

Pipe Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

	Diameter	Type	In-Effluent	Rim to Invert	Depth of Flow	Fill Depth	Connection Type	Grade Score
1	18"	CMP	Effluent	105"	2"	0"	Grouted	2
2	18"	CMP	Influent	105"	2"	0"	Grouted	2

Structure Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

Overall Structural Condition: 1

Steps: 0, score N/A

Depth of Sump: 14"

Depth of Debris in Sump: 0" to 6"

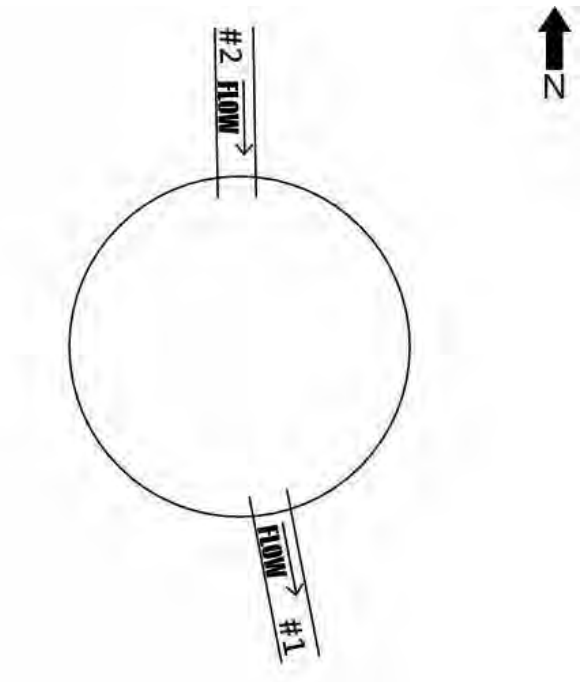
	Component	Material	Geometry	Grade Score	Dim A	Dim B	Height
1	Cover - Standard Cover	Metal	Rectangular	1	36"	18"	
2	Frame	Metal	Rectangular	1			6"
3	Chimney	Precast Concrete	Rectangular	1			7"
4	Barrel Section	Precast Concrete	Rectangular	2			10"
5	Barrel Section	Precast Concrete	Rectangular	1			48"
6	Base	Precast Concrete	Rectangular	1			32"

Primary Comments:

Additional Comments:



	PIPE ID
1	548-254 to 548-253
2	548-255 to 548-254



Line/Connection Comments:

548-254 to 548-253

INSPECTED 48.5' 7/22/17

548-255 to 548-254

30.1' INSPECTED BEFORE BLOCKED BY DEFECT 7/22/17



548-254 Facing North



Cover



Norht is up



North is up

CR NHS STORM DRAIN INSPECTIONS

STORM DRAIN STRUCTURE INSPECTION REPORT

Manhole # 548-258A

Date, Inspector(s), & Location

Date of Inspection: Wednesday, August 2, 2017

Inspector(s): Stroh, Gastrock

General Location:

Pipe Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

	Diameter	Type	In-Effluent	Rim to Invert	Depth of Flow	Fill Depth	Connection Type	Grade Score
1	18"	CMP	Influent	65"			Grouted	2
2	18"	CMP	Effluent		0"	0"	Grouted	2
3	18"	CMP	Influent	62"			Grouted	2

Structure Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

Overall Structural Condition: 2

Steps: 3, Polyvinyl Coated, score 1

Depth of Sump: 8"

Depth of Debris in Sump: 6" to 18"

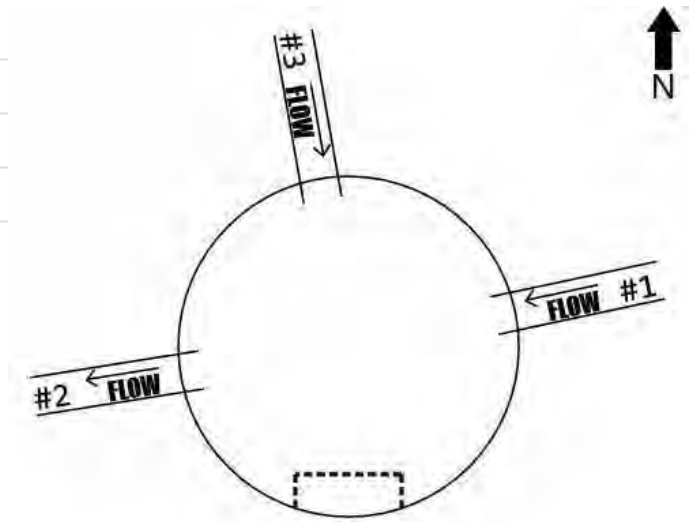
	Component	Material	Geometry	Grade Score	Dim A	Dim B	Height
1	Cover - Standard Cover	Metal	Round	1	32"		
2	Frame	Metal	Round	1			7"
3	Chimney	Precast Concrete	Round	2			15"
4	Reducing Slab	Precast Concrete	Round	1			9"
5	Barrel Section	Precast Concrete	Round	1	48"		12"
6	Base	Precast Concrete	Round	1	48"		30"

Primary Comments:

Additional Comments:



PIPE ID	
1	548-258 to 548-258A
2	548-258A to 548-253
3	548-262 to 548-258A



Line/Connection Comments:

548-258 to 548-258A

Inspected 29.3' 8/2/17

548-258A to 548-253

276 ft completed 8/2/17

548-262 to 548-258A

51.7 ft completed 8/2/17



548-258A Facing North



North is up



North is up



Chimney and Frame, North is up



Chimney and Frame, East is up



Chimney and Frame, West is up

CR NHS STORM DRAIN INSPECTIONS

STORM DRAIN STRUCTURE INSPECTION REPORT

Catchbasin Manhole # **548-258**

Date, Inspector(s), & Location

Date of Inspection: Wednesday, August 2, 2017

Inspector(s): Stroh, Gastrock

General Location: 8501 ARCTIC BLVD

Pipe Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

	Diameter	Type	In-Effluent	Rim to Invert	Depth of Flow	Fill Depth	Connection Type	Grade Score
1	18"	CMP	Influent		0"		Grouted	
2	18"	CMP	Effluent				Grouted	

Structure Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

Overall Structural Condition: 1

Steps: 2, Polyvinyl Coated, score 1

Depth of Sump: 12"

Depth of Debris in Sump: 0" to 6"

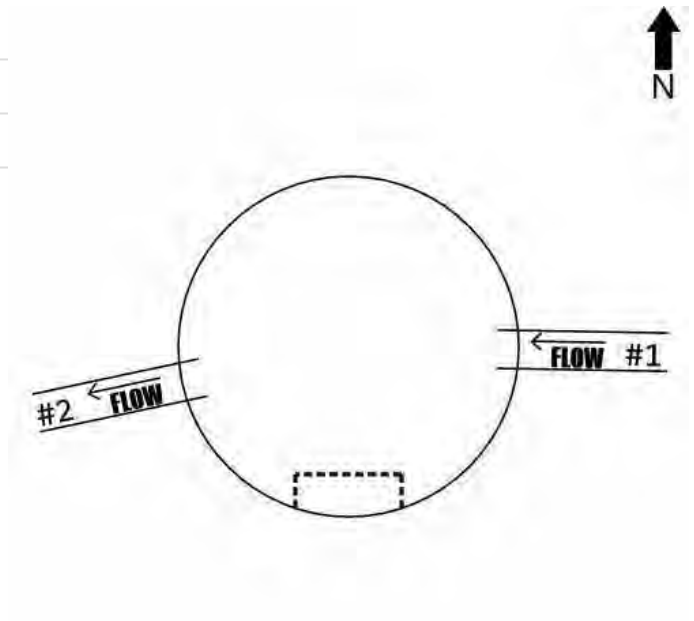
	Component	Material	Geometry	Grade Score	Dim A	Dim B	Height
1	Cover - Mountable Curb Inlet	Metal	Rectangular	1	36"	18"	
2	Frame	Metal	Rectangular	1			9"
3	Chimney	Precast Concrete	Round	1			6"
4	Reducing Slab	Precast Concrete	Round	1			8"
5	Base	Precast Concrete	Round	1	48"		42"

Primary Comments:

Additional Comments:



	PIPE ID
1	548-259 to 548-258
2	548-258 to 548-258A



Line/Connection Comments:

548-259 to 548-258

Inspected 132.7' 8/2/17

548-258 to 548-258A

Inspected 29.3' 8/2/17



548-258 Facing North



Northwest is up



Facing West



Facing East

CR NHS STORM DRAIN INSPECTIONS

STORM DRAIN STRUCTURE INSPECTION REPORT

Catchbasin Manhole # **548-259**

Date, Inspector(s), & Location

Date of Inspection: Wednesday, August 2, 2017

Inspector(s): Stroh, Gastrock

General Location: 514 W DIMOND BLVD

Pipe Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

	Diameter	Type	In-Effluent	Rim to Invert	Depth of Flow	Fill Depth	Connection Type	Grade Score
1	12"	CMP	Influent	32"			Grouted	1
2	18"	CMP	Effluent	51"	0"	0"	Grouted	1

Structure Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

Overall Structural Condition: 1

Steps: 3, Polyvinyl Coated, score 1

Depth of Sump: 17"

Depth of Debris in Sump: 0" to 6"

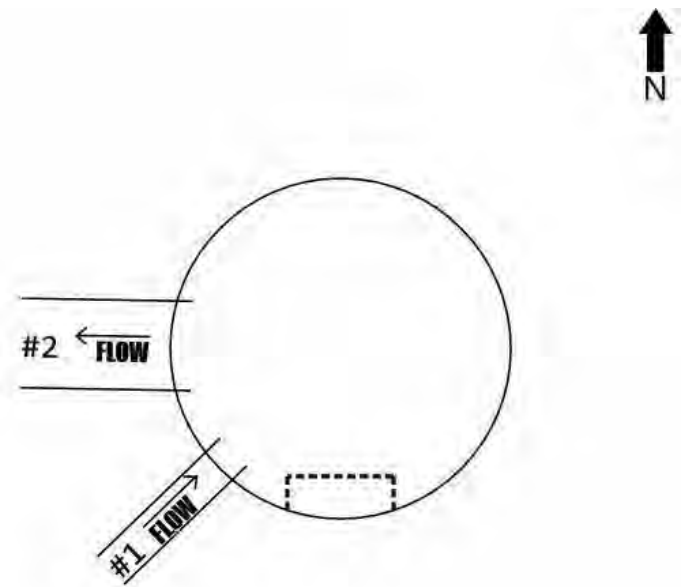
	Component	Material	Geometry	Grade Score	Dim A	Dim B	Height
1	Cover - Mountable Curb Inlet	Metal	Rectangular	1	36"	18"	
2	Frame	Metal	Rectangular	1			9"
3	Chimney	Precast Concrete	Round	1			6"
4	Reducing Slab	Precast Concrete	Round	1			8"
5	Base	Precast Concrete	Round	1			40"

Primary Comments:

Additional Comments:



PIPE ID	
1	548-260 to 548-259
2	548-259 to 548-258



Line/Connection Comments:

548-259 to 548-258

Inspected 132.7' 8/2/17



Influent Pipe



548-259 Facing Northeast



North is up



Effluent Pipe

CR NHS STORM DRAIN INSPECTIONS

STORM DRAIN STRUCTURE INSPECTION REPORT

Manhole # **1488-43**

Date, Inspector(s), & Location

Date of Inspection: Saturday, July 22, 2017

Inspector(s): Miller, Stroh

General Location:

Pipe Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

	Diameter	Type	In-Effluent	Rim to Invert	Depth of Flow	Fill Depth	Connection Type	Grade Score
1	60"	CMP	Effluent	126"				
2	60"	CMP	Influent	125"				
3	18"	CMP	Influent	117"				

Structure Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

Overall Structural Condition:

Steps: 7, Metal, score 1

Depth of Sump: 28"

Depth of Debris in Sump: 0" to 6"

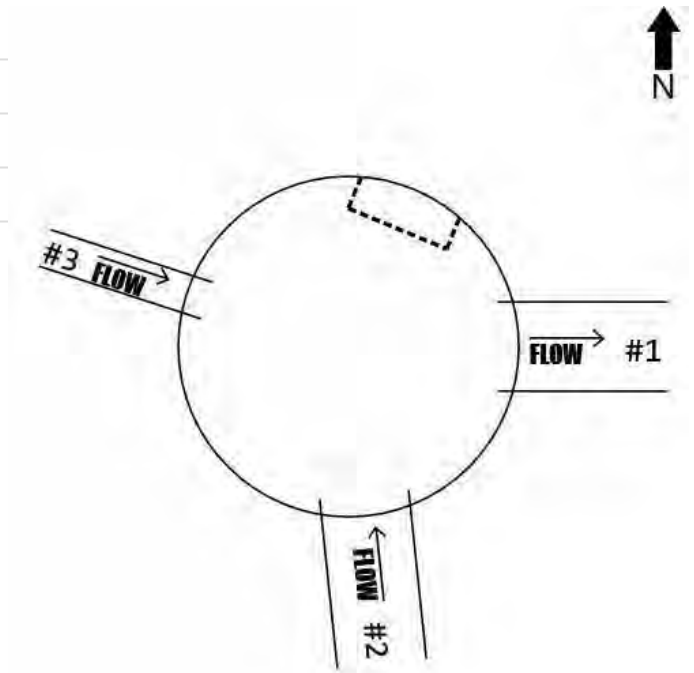
	Component	Material	Geometry	Grade Score	Dim A	Dim B	Height
1	Cover - Standard Cover	Metal	Round	1	25"		
2	Frame	Metal	Round	1			10"
3	Chimney	Precast Concrete	Round	2			6"
4	Chimney	Precast Concrete	Round	1			6"
5	Chimney	Precast Concrete	Round	1			3"
6	Cone	Precast Concrete	Round				28"
7	Reducing Slab	Precast Concrete	Round				10"
8	Base	Precast Concrete	Round				69"

Primary Comments:

Additional Comments:



	PIPE ID
1	1488-43 to 1488-11
2	1488-44 to 1488-43
3	1488-43A to 1488-43



Line/Connection Comments:

1488-43 to 1488-11

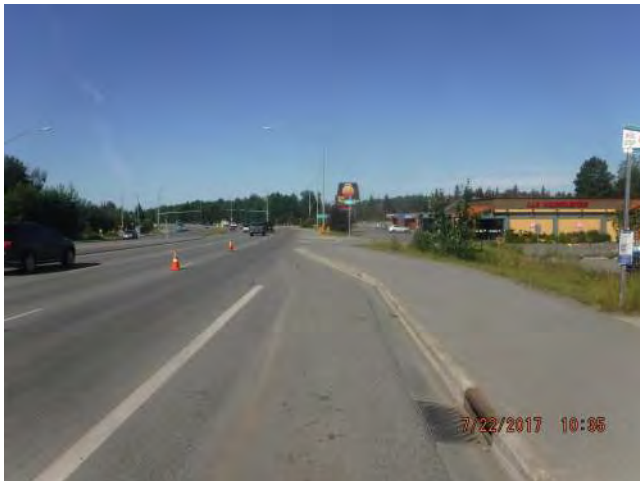
139.5' INSPECTED 7/22/17

1488-44 to 1488-43

104' Inspected 7/22/17

1488-43A to 1488-43

Inspected 7.3' 7/22/17



1488-43 Facing West



18" Influent Pipe



Cover



North is up



Facing Southeast



Facing South



Facing Southwest

CR NHS STORM DRAIN INSPECTIONS

STORM DRAIN STRUCTURE INSPECTION REPORT

Manhole # **1488-12**

Date, Inspector(s), & Location

Date of Inspection: Saturday, July 22, 2017

Inspector(s): Miller, Stroh

General Location: 370 W DIMOND BLVD

Pipe Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

	Diameter	Type	In-Effluent	Rim to Invert	Depth of Flow	Fill Depth	Connection Type	Grade Score
1	72"	CMP	Influent	150"				
2	72"	CMP	Effluent	150"				
3	18"	CMP	Influent					

Structure Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

Overall Structural Condition: 1

Steps: 11, Metal, score 1

Depth of Sump: 15"

Depth of Debris in Sump: 0" to 6"

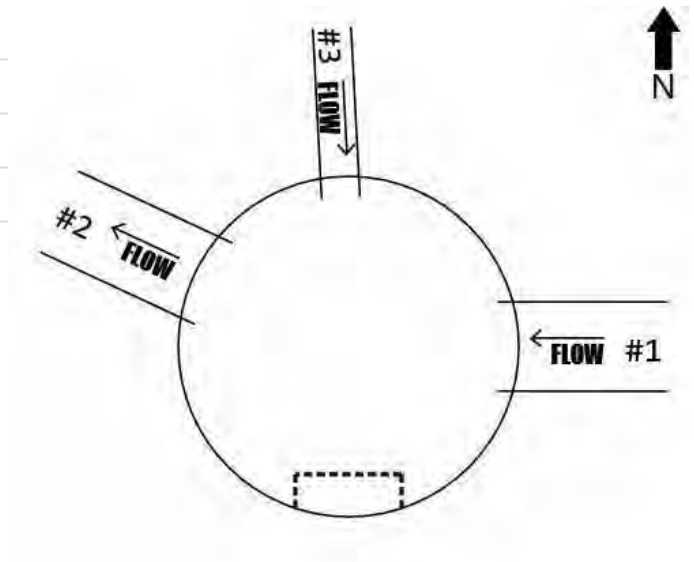
	Component	Material	Geometry	Grade Score	Dim A	Dim B	Height
1	Cover - Standard Cover	Metal	Round	1	25"		
2	Frame	Metal	Round	1			9"
3	Chimney	Precast Concrete	Round	2			4"
4	Chimney	Precast Concrete	Round	2			4"
5	Cone	Precast Concrete	Eccentric	1			30"
6	Reducing Slab	Precast Concrete	Round	1			8"
7	Barrel Section	Precast Concrete	Round	1			64"
8	Base	Precast Concrete	Round	1			45"

Primary Comments:

Additional Comments:



	PIPE ID
1	1488-13 to 1488-12
2	1488-12 to 1488-11
3	1488-42 to 1488-12



Line/Connection Comments:

1488-13 to 1488-12

245' INSPECTED 7/22/17

1488-12 to 1488-11

204' Inspected 7/22/17 Complete



1488-12 Facing North



Cover



North is up



East is up



East is up



18" influent pipe

CR NHS STORM DRAIN INSPECTIONS

STORM DRAIN STRUCTURE INSPECTION REPORT

Catchbasin Manhole # **1488-14**

Date, Inspector(s), & Location

Date of Inspection: Thursday, August 3, 2017

Inspector(s): Stroh

General Location:

Pipe Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

	Diameter	Type	In-Effluent	Rim to Invert	Depth of Flow	Fill Depth	Connection Type	Grade Score
1	18"	CMP	Influent	80"	0"	7"	Grouted	2
2	72"	CMP	Influent	154"	2"	0"	Grouted	2
3	72"	CMP	Effluent	154"	2"	0"	Grouted	2

Structure Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

Overall Structural Condition: 2

Steps: 12, Metal, score 2

Depth of Sump: 26"

Depth of Debris in Sump: 0" to 6"

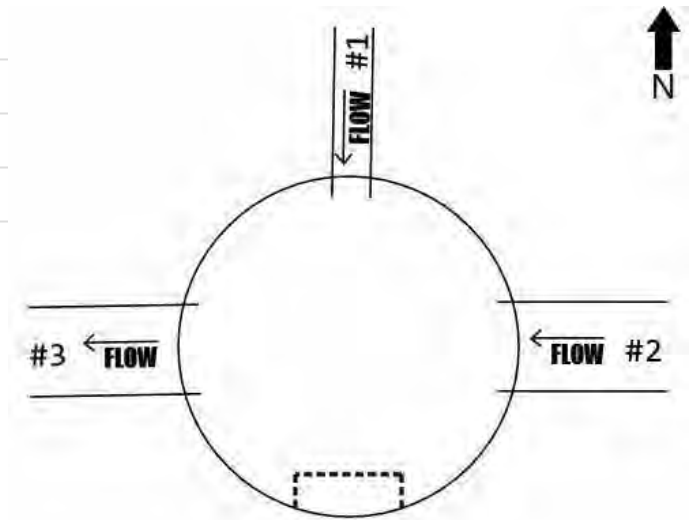
	Component	Material	Geometry	Grade Score	Dim A	Dim B	Height
1	Cover - Standard Cover	Metal	Rectangular	1	22"	18"	
2	Frame	Metal	Rectangular	1			6"
3	Chimney	Precast Concrete	Round	1			7"
4	Cone	Precast Concrete	Round	1			40"
5	Reducing Slab	Precast Concrete	Round	1			8"
6	Barrel Section	Precast Concrete	Round	1			60"
7	Base	Precast Concrete	Round	2			50"

Primary Comments:

Additional Comments:



	PIPE ID
1	1488-40 to 1488-14
2	1488-15 to 1488-14
3	1488-14 to 1488-13



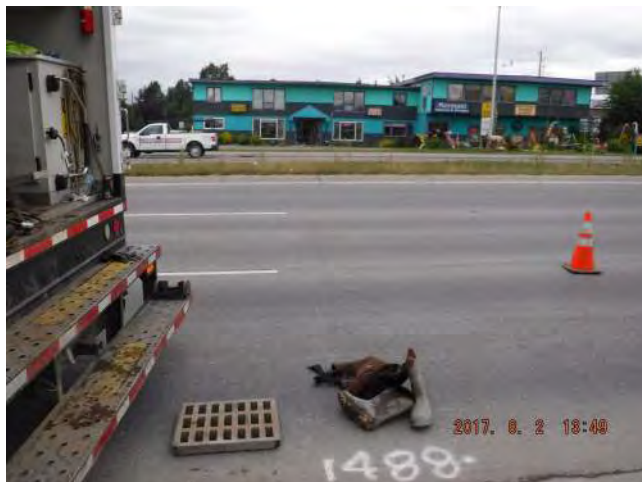
Line/Connection Comments:

1488-15 to 1488-14

Inspected 263.8' 8/2/17

1488-14 to 1488-13

Inspected 305.2' 8/2/17



1488-14 Facing North



North is up



Northwest is up



Facing West



Facing South



Northeast is up

CR NHS STORM DRAIN INSPECTIONS

STORM DRAIN STRUCTURE INSPECTION REPORT

Catchbasin Manhole # **1488-16**

Date, Inspector(s), & Location

Date of Inspection: Thursday, August 3, 2017

Inspector(s): Stroh

General Location:

Pipe Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

	Diameter	Type	In-Effluent	Rim to Invert	Depth of Flow	Fill Depth	Connection Type	Grade Score
1	Arched	CMP	Influent	127"	2"		Grouted	1
2	72"	CMP	Effluent	136"	2"	0"	Grouted	2
3	18"	CMP	Influent	89"	1"	0"	Grouted	1

Structure Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

Overall Structural Condition: 1

Steps: 10, Metal, score 1

Depth of Sump: 12"

Depth of Debris in Sump: 0" to 6"

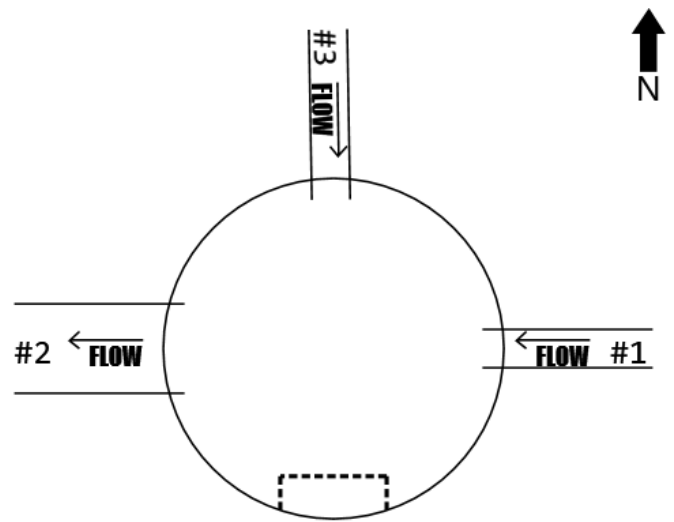
	Component	Material	Geometry	Grade Score	Dim A	Dim B	Height
1	Cover - Standard Cover	Metal	Rectangular	1	22"	18"	
2	Frame	Metal	Rectangular	1			6"
3	Chimney	Precast Concrete	Round	1			4"
4	Cone	Precast Concrete	Round	1			40"
5	Reducing Slab	Precast Concrete	Round	1			7"
6	Base	Precast Concrete	Rectangular	1	108"	67"	87"

Primary Comments:

Additional Comments:



	PIPE ID
1	1488-17 to 1488-16
2	1488-16 to 1488-15
3	1488-38 to 1488-16



Line/Connection Comments:

1488-17 to 1488-16

283.9' Inspected 8/3/17 94x58 Pipe

1488-16 to 1488-15

Inspected 266' 8/3/17



Facing West



Facing South



Facing East



Facing North



18" influent pipe



1488-16 North is up



Arch influent pipe



North is up



Chimney

CR NHS STORM DRAIN INSPECTIONS

STORM DRAIN STRUCTURE INSPECTION REPORT

Catchbasin Manhole # **1488-17**

Date, Inspector(s), & Location

Date of Inspection: Thursday, August 3, 2017

Inspector(s): Stroh

General Location: 8417 LAVIENTO DR

Pipe Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

	Diameter	Type	In-Effluent	Rim to Invert	Depth of Flow	Fill Depth	Connection Type	Grade Score
1	18"	CMP	Influent	92"	0"	0"	Grouted	0
2	Arched	CMP	Influent	200"	2"	0"	Grouted	1
3	Arched	CMP	Effluent	200"	2"	0"	Grouted	1

Structure Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

Overall Structural Condition: 3

Steps: 15, Metal, score 2

Depth of Sump: 10"

Depth of Debris in Sump: 0" to 6"

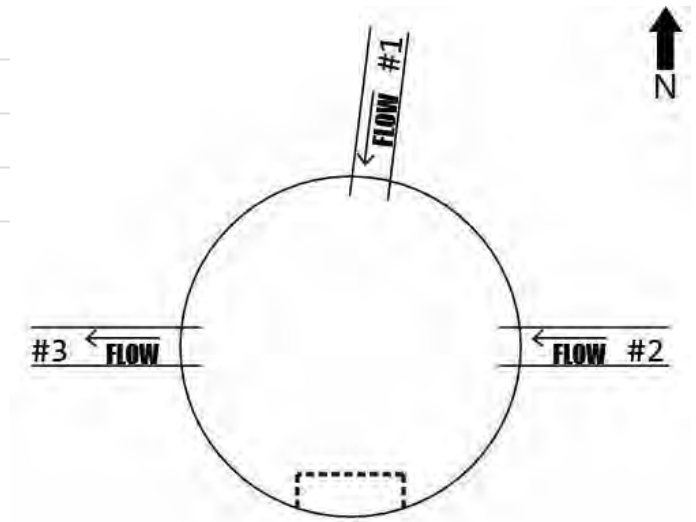
	Component	Material	Geometry	Grade Score	Dim A	Dim B	Height
1	Cover - Standard Cover	Metal	Rectangular	1	22"	18"	
2	Frame	Metal	Rectangular	1			6"
3	Chimney	Precast Concrete	Round	4			
4	Cone	Precast Concrete	Round	2			40"
5	Reducing Slab	Precast Concrete	Round	2			8"
6	Barrel Section	Precast Concrete	Round	2			72"
7	Base	Precast Concrete	Round	1			89"

Primary Comments: Chimney: Grout, no ring

Additional Comments:



	PIPE ID
1	1488-37 to 1488-17
2	1488-18 to 1488-17
3	1488-17 to 1488-16



Line/Connection Comments:

1488-37 to 1488-17

85.6' Inspected 8/3/17

1488-18 to 1488-17

473.7' Inspected 8/3/17 94x58 Pipe

1488-17 to 1488-16

283.9' Inspected 8/3/17 94x58 Pipe



Arched Effluent Pipe



Arched Influent Pipe



1488-17 Facing North



North is up



North is up



Frame and Chimney facing North



18" Influent Pipe

CR NHS STORM DRAIN INSPECTIONS

STORM DRAIN STRUCTURE INSPECTION REPORT

Catch Basin # **1488-23**

Date, Inspector(s), & Location

Date of Inspection: Friday, May 25, 2018

Inspector(s): Miller

General Location: 321 E DIMOND BLVD

Pipe Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

	Diameter	Type	In-Effluent	Rim to Invert	Depth of Flow	Fill Depth	Connection Type	Grade Score
1	12"	CMP	Influent	125"			Grouted	2
2	12"	CMP	Effluent	95"			Grouted	1
3	18"	CMP	Effluent	125"			Grouted	2

Structure Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

Overall Structural Condition: 2

Steps: 0

Depth of Sump: 23"

Depth of Debris in Sump: 0" to 6"

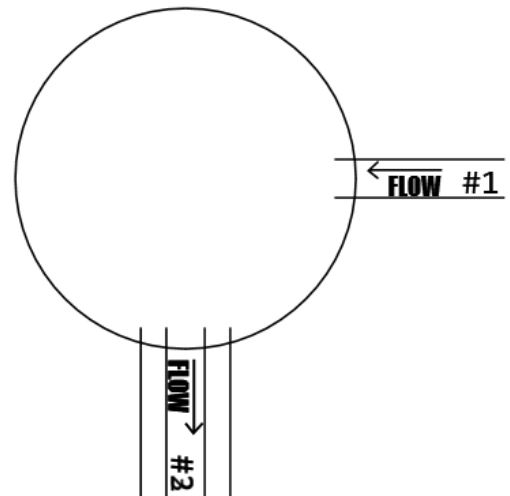
	Component	Material	Geometry	Grade Score	Dim A	Dim B	Height
1	Cover - Standard Cover	Metal	Rectangular	1	36"	18"	
2	Frame	Metal	Rectangular	1			4"
3	Chimney	Precast Concrete	Rectangular	3			5"
4	Chimney	Precast Concrete	Rectangular	2			4"
5	Barrel Section	Precast Concrete	Rectangular	1			44"
6	Barrel Section	Precast Concrete	Rectangular	1			48"
7	Base	Precast Concrete	Rectangular	1			44"

Primary Comments: Mortar cracked on chimneys

Additional Comments:



PIPE ID	
1	1488-24 to 1488-23
2	1488-23 to 1488-22
3	1488-23 to 1488-22



Line/Connection Comments:

1488-24 to 1488-23

Cleaned 10' to conduct inspection, 70' inspected before too much debris, requires full clean 5/24/18
5/25/18 pipe cleaned, inspected 122' toward 1488-24 before stopped by joint offset, Inspected 249.4'
toward 1488-23, camera could not pass offset, Complete, zoomed last 30'

1488-23 to 1488-22

Inspected 46.3' 5/24/18, Complete Probed downstream invert evidence of corrosion metal appeared
sound

1488-23 to 1488-22

Inspected 43.5' 5/25/18, Complete



1488-23 Facing South



Broke Chimney



Cover and Frame, South is up



Manhole Interior, South is up



Broke Chimney



Broke Chimney

CR NHS STORM DRAIN INSPECTIONS

STORM DRAIN STRUCTURE INSPECTION REPORT

Manhole # **1488-22**

Date, Inspector(s), & Location

Date of Inspection: Thursday, May 24, 2018

Inspector(s): Miller

General Location: 321 E DIMOND BLVD

Pipe Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

	Diameter	Type	In-Effluent	Rim to Invert	Depth of Flow	Fill Depth	Connection Type	Grade Score
1	12"	CMP	Influent	120"			Grouted	1
2	18"	CMP	Influent	190"			Grouted	1
3	12"	CMP	Influent	68"	0"	0"	Grouted	1
4	12"	PCMP	Effluent	120"	0"		Grouted	1
5	18"	CMP	Effluent	190"	3"		Grouted	1

Structure Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

Overall Structural Condition: 3

Steps: 14, Metal, score 1

Depth of Sump: 15"

Depth of Debris in Sump: 0" to 6"

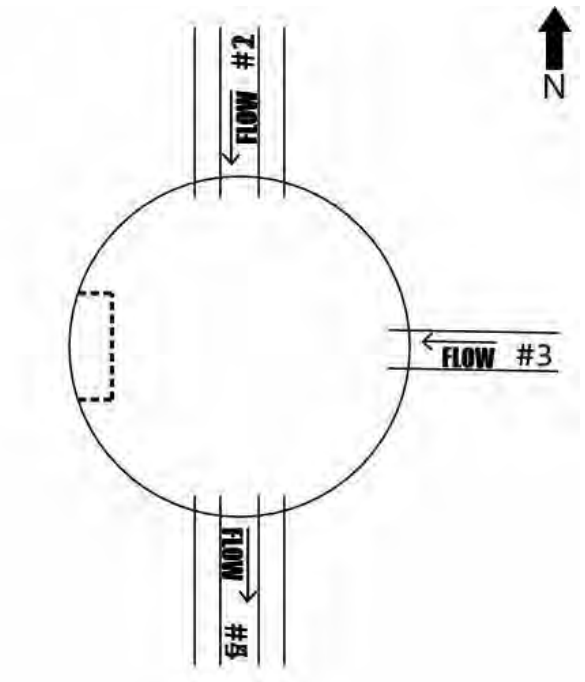
	Component	Material	Geometry	Grade Score	Dim A	Dim B	Height
1	Cover - Standard Cover	Metal	Round	1	25"		
2	Frame	Metal	Round	2			6"
3	Chimney	Precast Concrete	Round	4			6"
4	Chimney	Precast Concrete	Round	2			8"
5	Barrel Section	Precast Concrete	Round	2			25"
6	Barrel Section	Precast Concrete	Round	1			47"
7	Barrel Section	Precast Concrete	Round	1			78"
8	Base	Precast Concrete	Round	1			35"

Primary Comments: Exposed rebar in chimney, metal appeared sound in reachable pipes

Additional Comments:



	PIPE ID
1	1488-23 to 1488-22
2	1488-23 to 1488-22
3	1488-21 to 1488-22
4	1488-22 to 1488-18
5	1488-22 to 1488-18



Line/Connection Comments:

1488-23 to 1488-22

Inspected 46.3' 5/24/18, Complete Probed downstream invert evidence of corrosion metal appeared sound

1488-23 to 1488-22

Inspected 43.5' 5/25/18, Complete

1488-21 to 1488-22

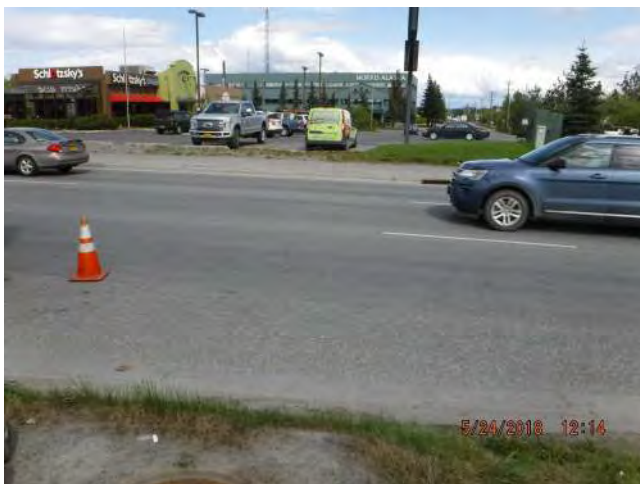
Inspected 5/24/18 393.5', Complete Probed downstream invert, metal appeared sound

1488-22 to 1488-18

Inspected 12' Pipe defect prevented camera from continuing, 5/24/18 Probed upstream invert, metal appeared sound

1488-22 to 1488-18

29.4' Inspected 8/3/17



1488-22 Facing North



1488-22 Interior



Cover



Exposed Rebar in Chimney



1488-22 North is up



Typical Connection Condition

CR NHS STORM DRAIN INSPECTIONS

STORM DRAIN STRUCTURE INSPECTION REPORT

Catchbasin Manhole # **1488-18**

Date, Inspector(s), & Location

Date of Inspection: Thursday, August 3, 2017

Inspector(s): Stroh

General Location: 300 E DIMOND BLVD

Pipe Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

	Diameter	Type	In-Effluent	Rim to Invert	Depth of Flow	Fill Depth	Connection Type	Grade Score
1	12"	PCMP	Influent		0"	0"	Grouted	1
2	18"	CMP	Influent	170"	0"	0"		
3	Arched	CMP	Influent	188"	2"	0"	Grouted	
4	12"	CMP	Influent	113"	0"	0"	Grouted	1
5	18"	CMP	Influent	102"	0"	0"	Grouted	
6	Arched	CMP	Effluent	188"	2"	0"	Grouted	

Structure Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

Overall Structural Condition: 1

Steps: 13, Metal, score 1

Depth of Sump: 16"

Depth of Debris in Sump: 0" to 6"

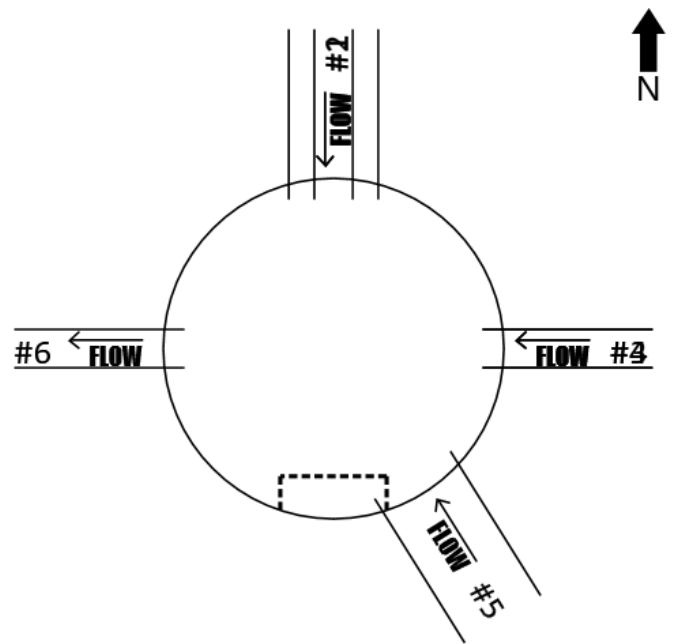
	Component	Material	Geometry	Grade Score	Dim A	Dim B	Height
1	Cover - Standard Cover	Metal	Rectangular	1	22"	18"	
2	Frame	Metal	Rectangular	1			7"
3	Chimney	Precast Concrete	Round	2			18"
4	Cone	Precast Concrete	Round	1			40"
5	Reducing Slab	Precast Concrete	Round	1			6"
6	Barrel Section	Precast Concrete	Round	1			44"
7	Base	Precast Concrete	Round	1			85"

Primary Comments:

Additional Comments:



PIPE ID	
1	1488-22 to 1488-18
2	1488-22 to 1488-18
3	1488-19 to 1488-18
4	1488-19 to 1488-18
5	1488-35 to 1488-18
6	1488-18 to 1488-17



Line/Connection Comments:

1488-22 to 1488-18

29.4' Inspected 8/3/17

1488-19 to 1488-18

380.6' Inspected 8/3/17 94x58 Pipe

1488-18 to 1488-17

473.7' Inspected 8/3/17 94x58 Pipe



Influent Perforated Pipes



1488-18 Northeast is up



North is up



Frame and Chimney



Facing West



North is up

CR NHS STORM DRAIN INSPECTIONS

STORM DRAIN STRUCTURE INSPECTION REPORT

Catch Basin # **1488-24**

Date, Inspector(s), & Location

Date of Inspection: Thursday, May 24, 2018

Inspector(s): Miller

General Location: 401 E DIMOND BLVD

Pipe Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

	Diameter	Type	In-Effluent	Rim to Invert	Depth of Flow	Fill Depth	Connection Type	Grade Score
1	12"	CMP	Influent	42"			Grouted	1
2	18"	CMP	Effluent	72"			Grouted	1
3	12"	CMP	Effluent	42"			Grouted	1
4	12"	CMP	Influent	45"			Grouted	1

Structure Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

Overall Structural Condition: 3

Steps: 0

Depth of Sump: 14"

Depth of Debris in Sump: 0" to 6"

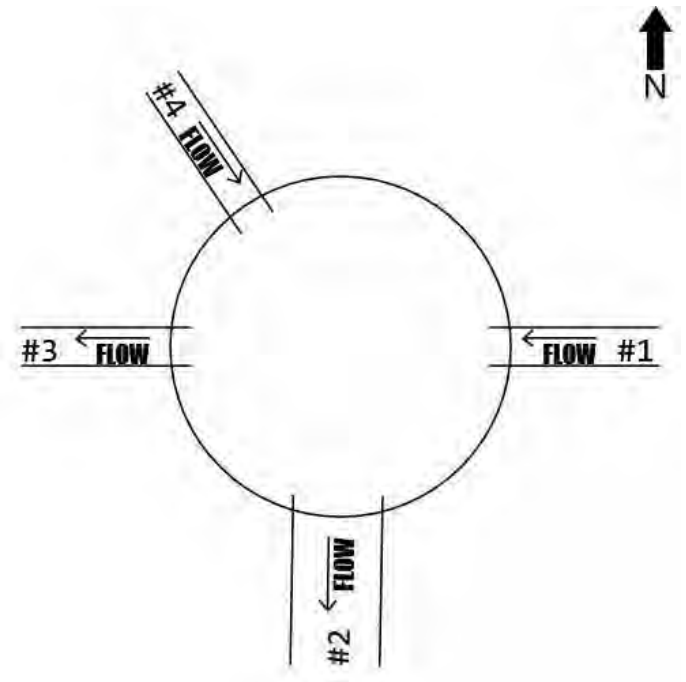
	Component	Material	Geometry	Grade Score	Dim A	Dim B	Height
1	Cover - Standard Cover	Metal	Rectangular	1	36"	18"	
2	Frame	Metal	Rectangular	1			7"
3	Barrel Section	Precast Concrete	Rectangular	4			40"
4	Base	Precast Concrete	Rectangular	1			42"

Primary Comments: Exposed rebar in barrel

Additional Comments:



PIPE ID	
1	1488-26 to 1488-24
2	1488-24 to 1488-21
3	1488-24 to 1488-23
4	1488-25 to 1488-24



Line/Connection Comments:

1488-26 to 1488-24

276.2 Inspected 5/24/18, Complete

1488-24 to 1488-21

50.1' Inspected 5/25/18, Zoomed to complete

1488-24 to 1488-23

Cleaned 10' to conduct inspection, 70' inspected before too much debris, requires full clean 5/24/18
5/25/18 pipe cleaned, inspected 122' toward 1488-24 before stopped by joint offset, Inspected 249.4'
toward 1488-23, camera could not pass offset, Complete, zoomed last 30'



1488-24 Facing East



1488-24 North is up



Cover



Pipe Configuration, North is up



Exposed rebar in manhole wall



Interior, South is up

CR NHS STORM DRAIN INSPECTIONS

STORM DRAIN STRUCTURE INSPECTION REPORT

Catchbasin Manhole # **1488-19**

Date, Inspector(s), & Location

Date of Inspection: Thursday, August 3, 2017

Inspector(s): Miller, Stroh

General Location: 8401 DIMOND D CIR

Pipe Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

	Diameter	Type	In-Effluent	Rim to Invert	Depth of Flow	Fill Depth	Connection Type	Grade Score
1	18"	CMP	Influent				Grouted	1
2	Arched	CMP	Influent	125"			Grouted	1
3	12"	CMP	Influent	42"			Grouted	2
4	18"	CMP	Influent	104"			Grouted	1
5	Arched	CMP	Effluent	128"			Grouted	1
6	12"	CMP	Effluent	28"			Grouted	1

Structure Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

Overall Structural Condition: 1

Steps: 10, Metal, score 1

Depth of Sump: 12"

Depth of Debris in Sump: 0" to 6"

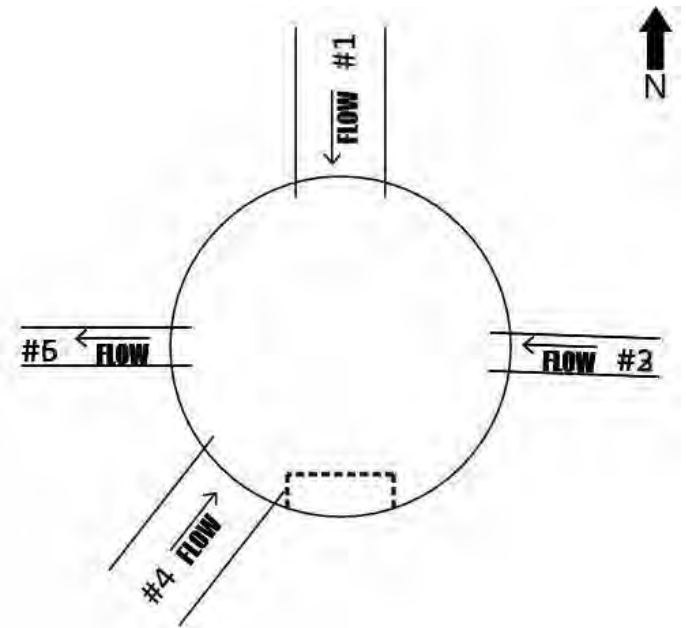
	Component	Material	Geometry	Grade Score	Dim A	Dim B	Height
1	Cover - Standard Cover	Metal	Rectangular	1	22"	18"	
2	Frame	Metal	Round	1			7"
3	Cone	Precast Concrete	Eccentric	1			42"
4	Reducing Slab	Precast Concrete	Round	1			8"
5	Base	Precast Concrete	Rectangular	1			82"

Primary Comments:

Additional Comments:



	PIPE ID
1	1488-21 to 1488-19
2	1488-32 to 1488-19
3	1488-32 to 1488-19
4	1488-20 to 1488-19
5	1488-19 to 1488-18
6	1488-19 to 1488-18



Line/Connection Comments:

1488-21 to 1488-19

23' INSPECTED 8/3/17

1488-32 to 1488-19

94X58" PIPE 153.8' Inspected 8/3/17

1488-19 to 1488-18

380.6' Inspected 8/3/17 94x58 Pipe



1488-19 Facing East



North is up



Cover



Frame and Chimney



North is up

CR NHS STORM DRAIN INSPECTIONS

STORM DRAIN STRUCTURE INSPECTION REPORT

Manhole # **1488-27**

Date, Inspector(s), & Location

Date of Inspection: Thursday, May 24, 2018

Inspector(s): Miller

General Location: 501 W DIMOND BLVD

Pipe Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

	Diameter	Type	In-Effluent	Rim to Invert	Depth of Flow	Fill Depth	Connection Type	Grade Score
1	12"	CMP	Influent	71"			Grouted	1
2	18"	CMP	Influent	102"			Grouted	1
3	12"	CMP	Influent	60"			Grouted	1
4	18"	CMP	Influent	106"			Grouted	1
5	12"	CMP	Effluent	85"			Grouted	1

Structure Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

Overall Structural Condition: 1

Steps: 7, Metal, score 1

Depth of Sump: 15"

Depth of Debris in Sump: 0" to 6"

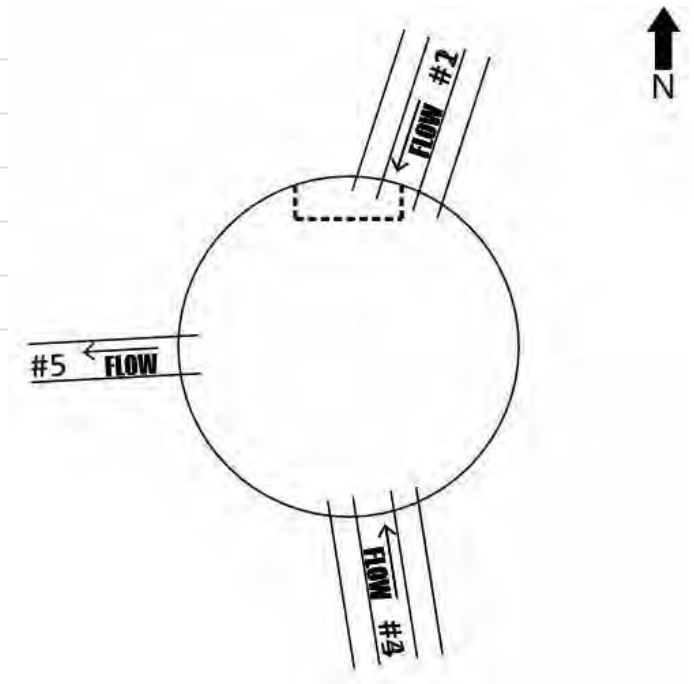
	Component	Material	Geometry	Grade Score	Dim A	Dim B	Height
1	Cover - Standard Cover	Metal	Round	1	25"		
2	Frame	Metal	Round	1			7"
3	Chimney	Precast Concrete	Round	1			8"
4	Cone	Precast Concrete	Eccentric	1			28"
5	Barrel Section	Precast Concrete	Round	1			37"
6	Base	Precast Concrete	Round	1			40"

Primary Comments: Metal appeared sound in all pipes

Additional Comments:



	PIPE ID
1	1488-26 to 1488-27
2	1488-26 to 1488-27
3	1488-29 to 1488-27
4	to 1488-27
5	1488-27 to 1488-21



Line/Connection Comments:

1488-26 to 1488-27

Inspected 5/24/18 50.0', Complete

1488-29 to 1488-27

Inspected 63.5' 5/24/18, Complete

1488-27 to 1488-21

Inspected 251.7' 5/24/18, Complete



1488-27 Facing East



Cover

CR NHS STORM DRAIN INSPECTIONS

STORM DRAIN STRUCTURE INSPECTION REPORT

Catchbasin Manhole # **1488-29**

Date, Inspector(s), & Location

Date of Inspection: Friday, July 6, 2018

Inspector(s): Miller

General Location: 544 E DIMOND BLVD

Pipe Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

	Diameter	Type	In-Effluent	Rim to Invert	Depth of Flow	Fill Depth	Connection Type	Grade Score
1	64"	CMP	Influent	150"	4"	0"	Grouted	1
2	15"	CPEP	Influent	48"	1"	0"	Grouted	1
3	64"	CMP	Effluent	150"	4"	0"	Grouted	1
4	12"	CMP	Effluent	40"	0"	1"	Grouted	1
5	12"	CMP	Effluent	48"	0"	1"	Grouted	1
6	18"	CMP	Effluent	110"	1"	1"	Grouted	1

Structure Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

Overall Structural Condition: 2

Steps: 10, Metal, score 1

Depth of Sump: 2"

Depth of Debris in Sump: None

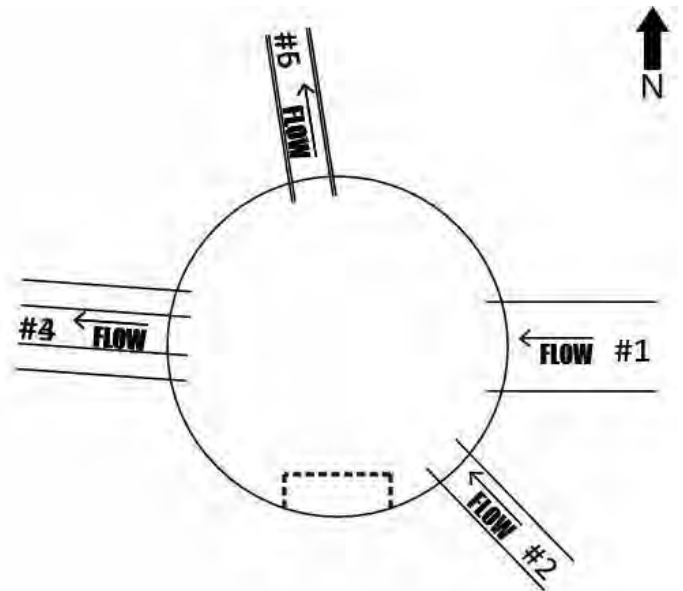
	Component	Material	Geometry	Grade Score	Dim A	Dim B	Height
1	Cover - Standard Cover	Metal	Rectangular	1	22"	18"	
2	Frame	Metal	Rectangular	2			7"
3	Reducing Slab	Precast Concrete	Round	2	48"		9"
4	Barrel Section	Precast Concrete	Round	2	96"		36"
5	Reducing Slab	Precast Concrete	Round	1			8"
6	Barrel Section	Precast Concrete	Round	2			18"
7	Base	Precast Concrete	Round	1			64"

Primary Comments:

Additional Comments:



	PIPE ID
1	1488-28 to 1488-29
2	1488-30 to 1488-29
3	1488-29 to 1488-32
4	1488-29 to 1488-32
5	1488-29 to 1488-27
6	to 1488-27



Line/Connection Comments:

1488-28 to 1488-29

INVERT PROBED, METAL LOSS INSPECTED 227' COMPLETE 7/6/18

1488-29 to 1488-32

109.3' INSPECTED COMPLETE 7/6/18 INVERT PROBED, METAL LOSS

1488-29 to 1488-27

Inspected 63.5' 5/24/18, Complete

to 1488-27

INSPECTED 42.2' DEBRIS PREVENTED COMPLETION 7/6/18 Inspected 23.2' from opposite end 7/7/18



1488-29 Facing East



North is up



Frame



South is up



1488-29 Interior and Steps



Crack in Barrel



Pipe #6 Connection

CR NHS STORM DRAIN INSPECTIONS

STORM DRAIN STRUCTURE INSPECTION REPORT

Manhole # **1488-187**

Date, Inspector(s), & Location

Date of Inspection: Friday, July 6, 2018

Inspector(s): Miller

General Location: 790 E DIMOND BLVD

Pipe Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

	Diameter	Type	In-Effluent	Rim to Invert	Depth of Flow	Fill Depth	Connection Type	Grade Score
1	18"	CMP	Influent	85"		0"	Grouted	1
2	64"	CMP	Influent	164"	4"	0"	Grouted	2
3	12"	CMP	Influent	45"	1"	0"	Grouted	1
4	64"	CMP	Effluent	164"	3"	0"	Grouted	2

Structure Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

Overall Structural Condition: 2

Steps: 11, Metal, score 1

Depth of Sump: 12"

Depth of Debris in Sump: 6" to 18"

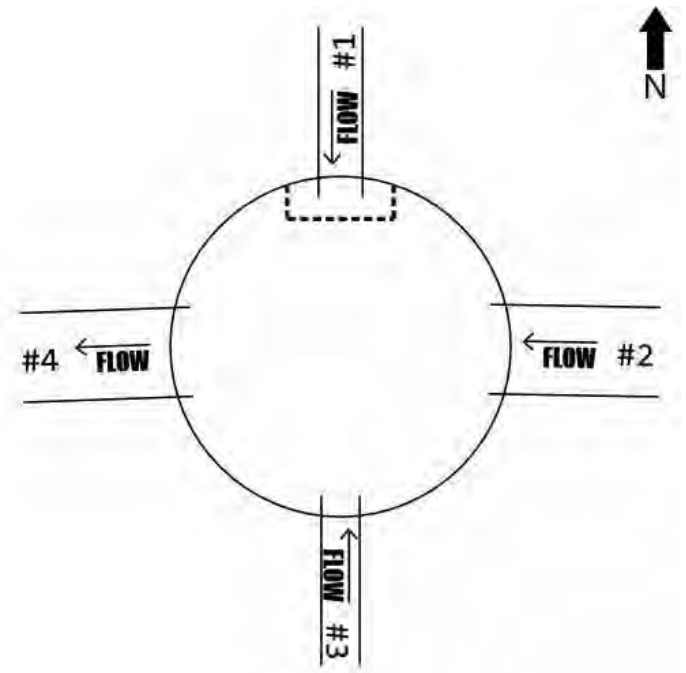
	Component	Material	Geometry	Grade Score	Dim A	Dim B	Height
1	Cover - Standard Cover	Metal	Round	2	25"		
2	Frame	Metal	Round	2			4"
3	Chimney	Precast Concrete	Round	1			5"
4	Cone	Precast Concrete	Round	1			54"
5	Reducing Slab	Precast Concrete	Round	1	48"		8"
6	Barrel Section	Precast Concrete	Round	1	96"		60"
7	Base	Precast Concrete	Round	1			45"

Primary Comments: 3 STEPS NORTH, MISSING RUNG

Additional Comments: DEBRIS TOO DEEP FOR ACCURATE BASE AND SUMP DEPTH



PIPE ID	
1	1488-188 to 1488-187
2	1488-191 to 1488-187
3	1488-190 to 1488-187
4	1488-187 to 1488-28



Line/Connection Comments:

1488-188 to 1488-187

Inspected 93.3' Complete 7/7/18

1488-191 to 1488-187

INSPECTED 243.7' 7/6/18 COMPLETE

1488-190 to 1488-187

SHORT LINE SAW WHOLE PIPE 7/6/18

1488-187 to 1488-28

INSPECTED 247.7' COMPLETE 7/6/18



1448-187 Facing North



Cover



North is up



Pipe #1 Connection



Typical Condition of Concrete



Pipe #3 Connection

CR NHS STORM DRAIN INSPECTIONS

STORM DRAIN STRUCTURE INSPECTION REPORT

Catchbasin Manhole # 1488-195

Date, Inspector(s), & Location

Date of Inspection: Friday, July 6, 2018

Inspector(s): Miller

General Location: 790 E DIMOND BLVD

Pipe Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

	Diameter	Type	In-Effluent	Rim to Invert	Depth of Flow	Fill Depth	Connection Type	Grade Score
1	64"	CMP	Influent	174"	3"	0"	Grouted	1
2	64"	CMP	Effluent	174"	3"	0"	Grouted	1
3	18"	CMP	Influent	45"	0"	0"	Grouted	1

Structure Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

Overall Structural Condition: 2

Steps: 14, Metal, score 1

Depth of Sump: 0"

Depth of Debris in Sump: 0" to 6"

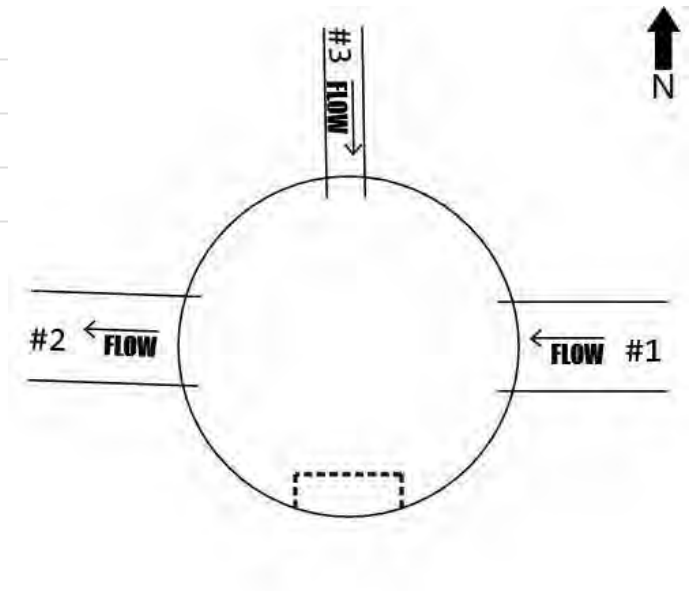
	Component	Material	Geometry	Grade Score	Dim A	Dim B	Height
1	Cover - Standard Cover	Metal	Rectangular	1	22"	18"	
2	Frame	Metal	Rectangular	1			7"
3	Chimney	Precast Concrete	Round	3			8"
4	Cone	Precast Concrete	Round	1			36"
5	Reducing Slab	Precast Concrete	Round	1			8"
6	Barrel Section	Precast Concrete	Round	1	96"		48"
7	Base	Precast Concrete	Round	1			67"

Primary Comments: PROBED INVERTS METAL LOSS IN 64" PIPES

Additional Comments:



	PIPE ID
1	1488-196 to 1488-195
2	1488-195 to 1488-191
3	1488-235 to 1488-195



Line/Connection Comments:

1488-196 to 1488-195

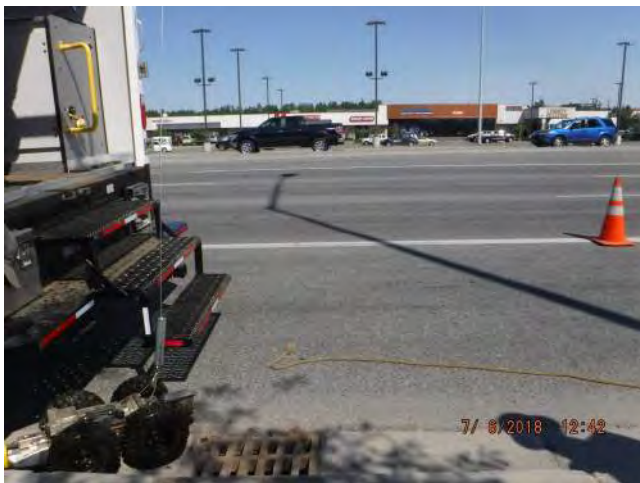
286.2' INSPECTED COMPLETE 7/6/18

1488-195 to 1488-191

285.8' INSPECTED COMPLETE 7/6/18

1488-235 to 1488-195

Inspected 71.6' Zoomed to end 7/7/18



1488-195 Facing North

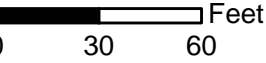
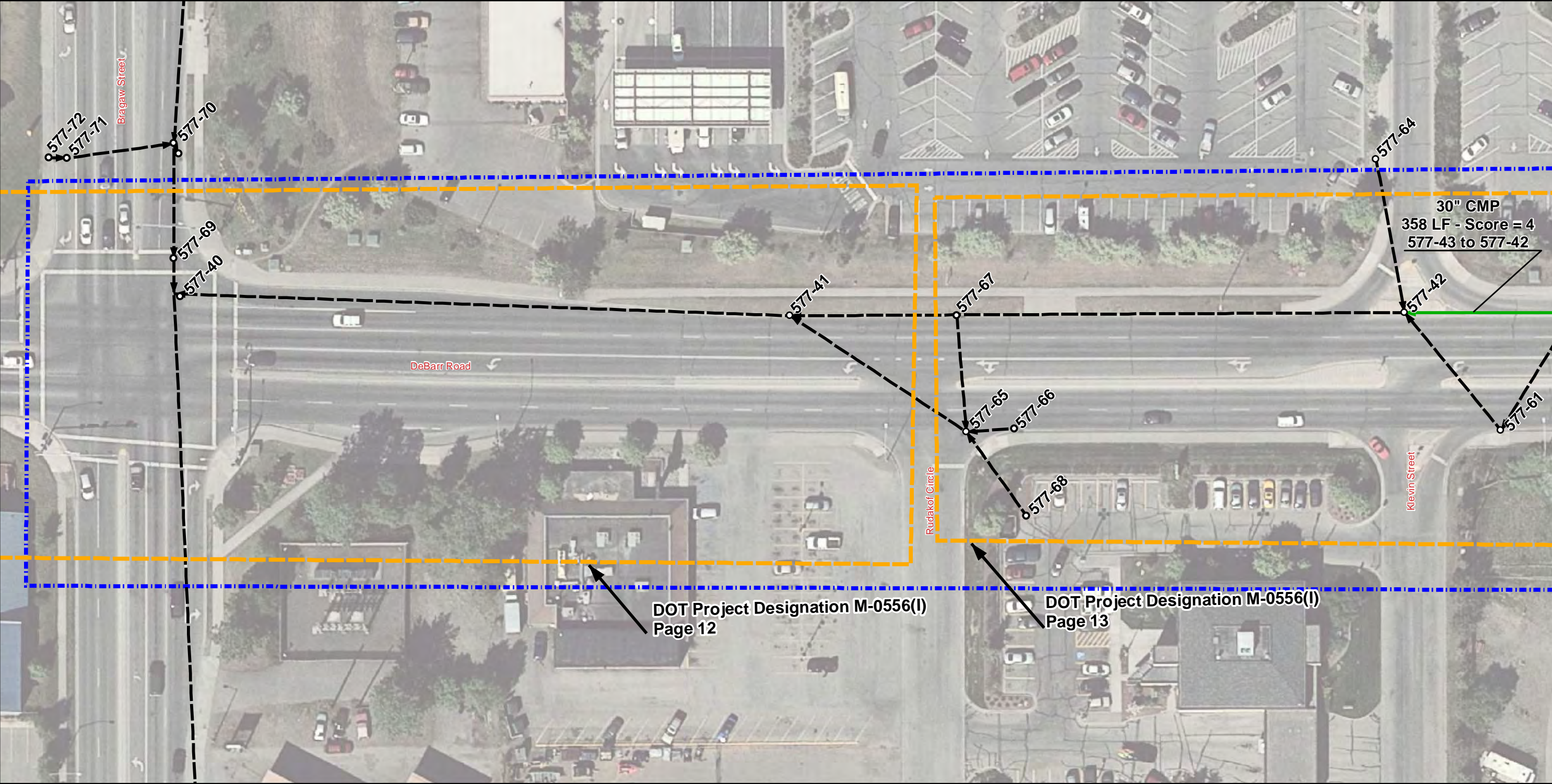


North is up

**Debarr Road from
Bragaw Street to Muldoon Road**

Storm Drain System Maps

Debarr Road: Bragaw Street to Muldoon Road



Legend

- Project Area
- Asbuilt Designation

Manhole/Catchbasin

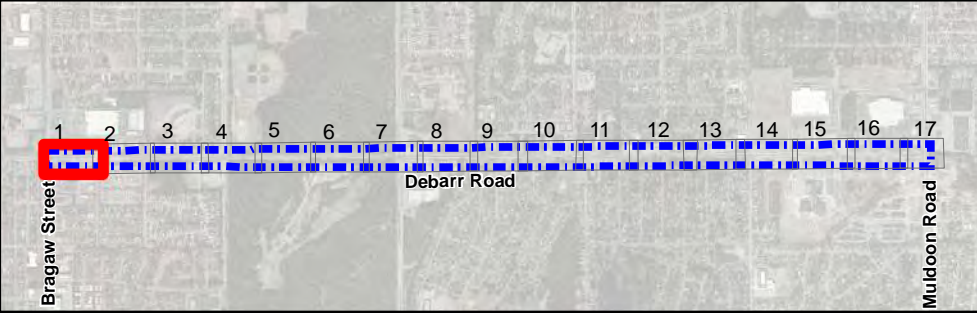
- Not Inspected
- Inspected
- Not Located

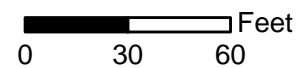
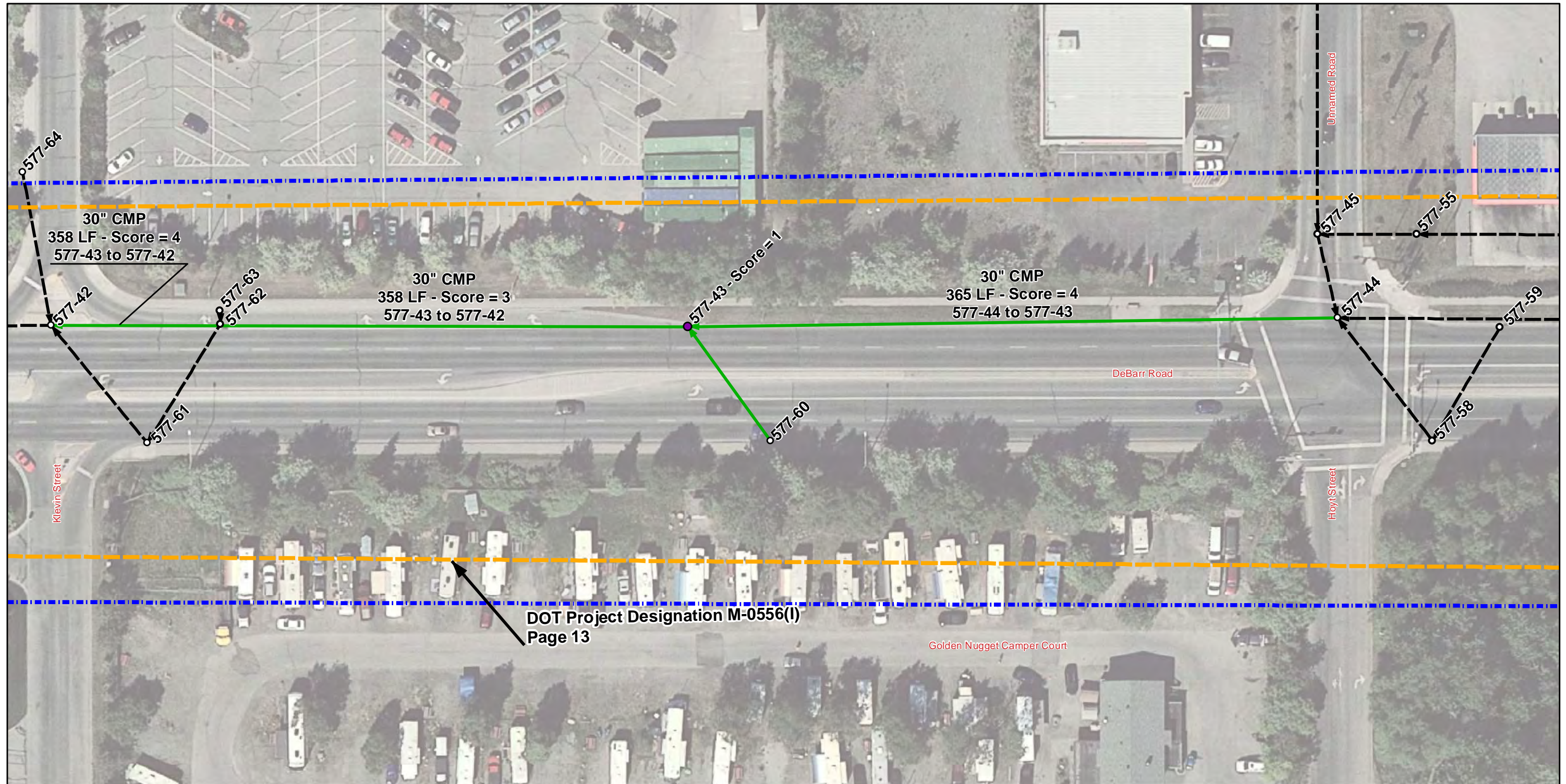
Pipe Segment

- Inspected
- Not Inspected

Score

- 0 - No Defect
- 1 - Minor Defect
- 2 - Minor to Moderate Defect
- 3 - Moderate Defect
- 4 - Significant Defect
- 5 - Most Significant Defect
- N - Not Scored







Legend

Manhole/Catchbasin

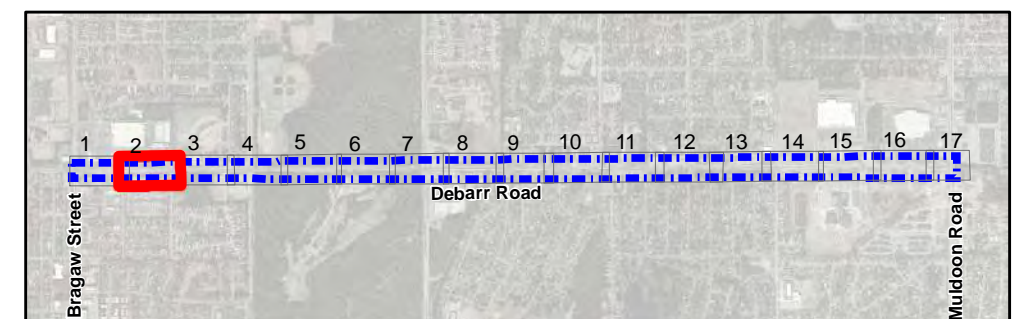
- Not Inspected
- Inspected
- ⊕ Not Located

Pipe Segment

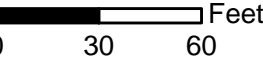
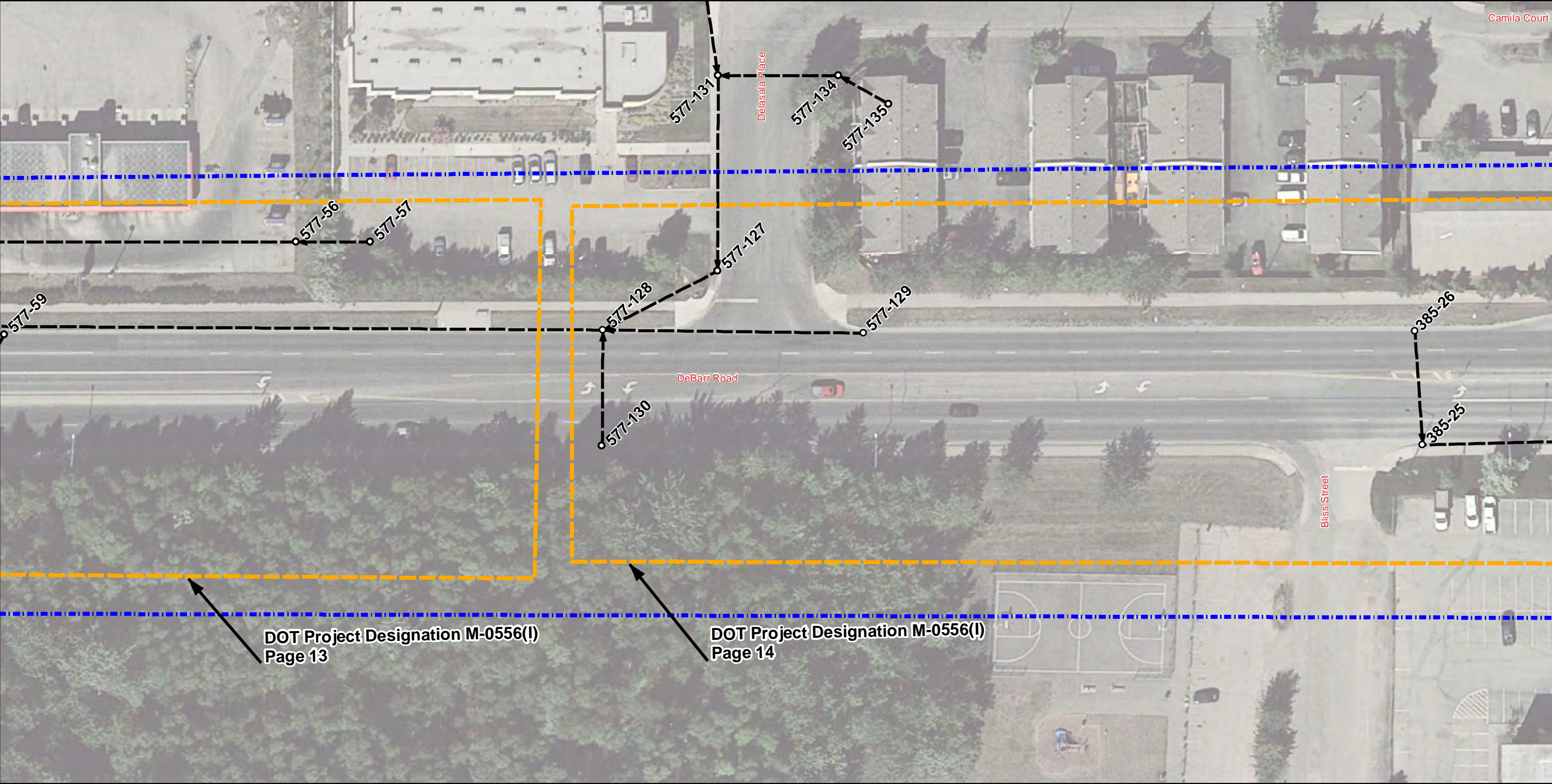
-  Inspected
 Not Inspected

Score

- 0 - No Defect
1 - Minor Defect
2 - Minor to Moderate Defect
3 - Moderate Defect
4 - Significant Defect
5 - Most Significant Defect
N - Not Scored



Debarr Road: Bragaw Street to Muldoon Road



Legend

- Project Area
- Asbuilt Designation

Manhole/Catchbasin

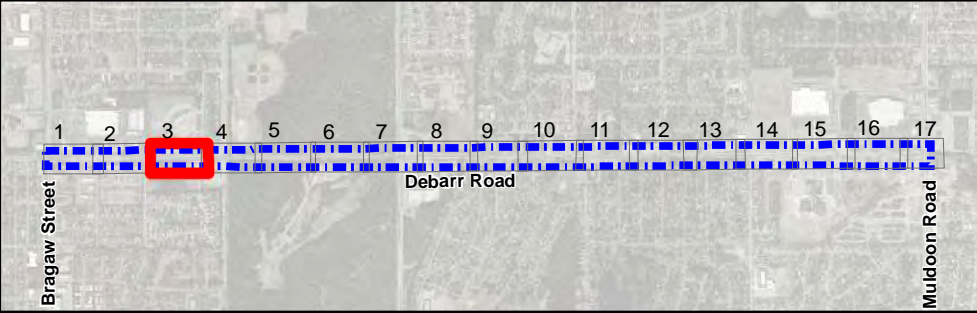
- Not Inspected
- Inspected
- Not Located

Pipe Segment

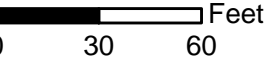
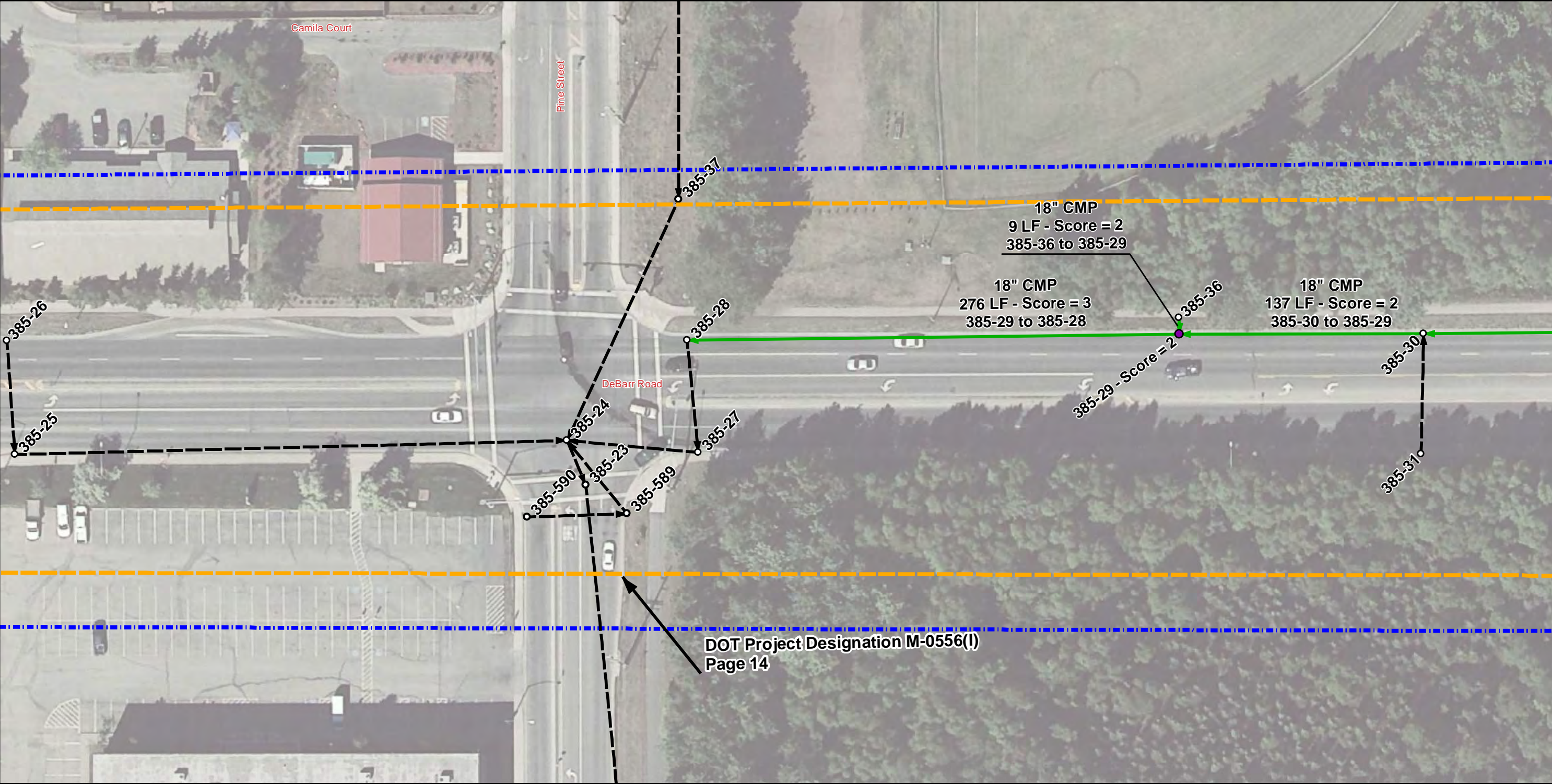
- Inspected
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- 2 - Minor to Moderate Defect
- 3 - Moderate Defect
- 4 - Significant Defect
- 5 - Most Significant Defect
- N - Not Scored



Debarr Road: Bragaw Street to Muldoon Road



Legend

- Project Area
- Asbuilt Designation

Manhole/Catchbasin

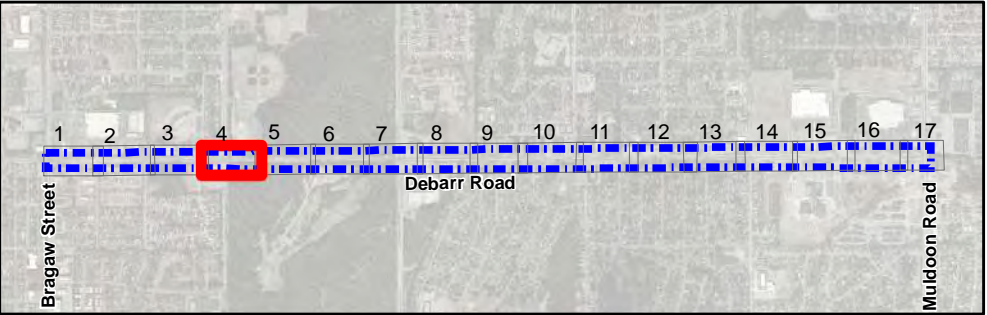
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Pipe Segment

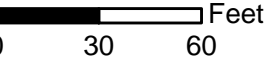
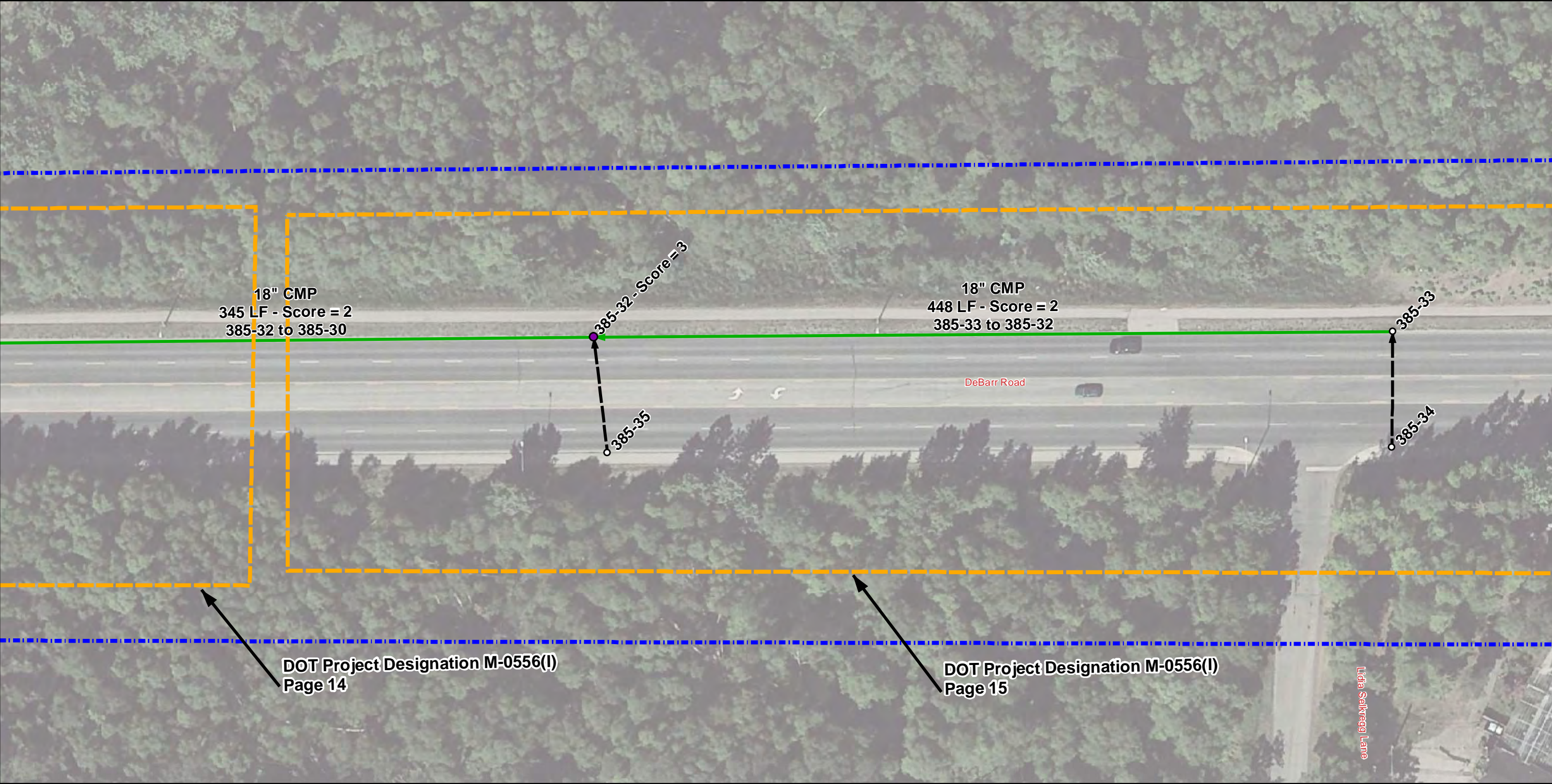
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Debarr Road: Bragaw Street to Muldoon Road



Legend

- Project Area
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Manhole/Catchbasin

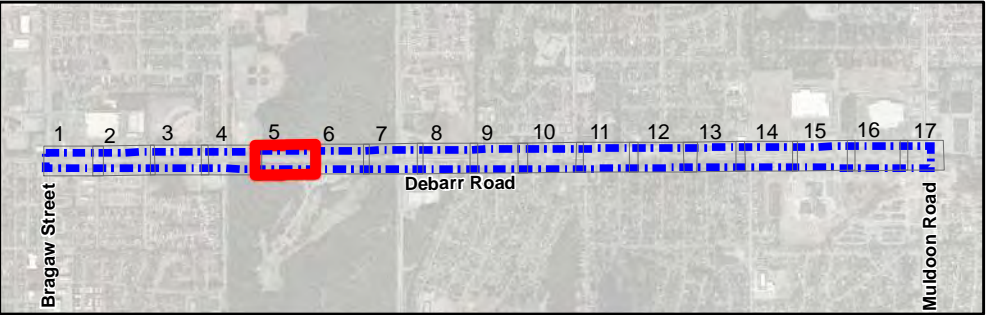
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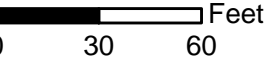
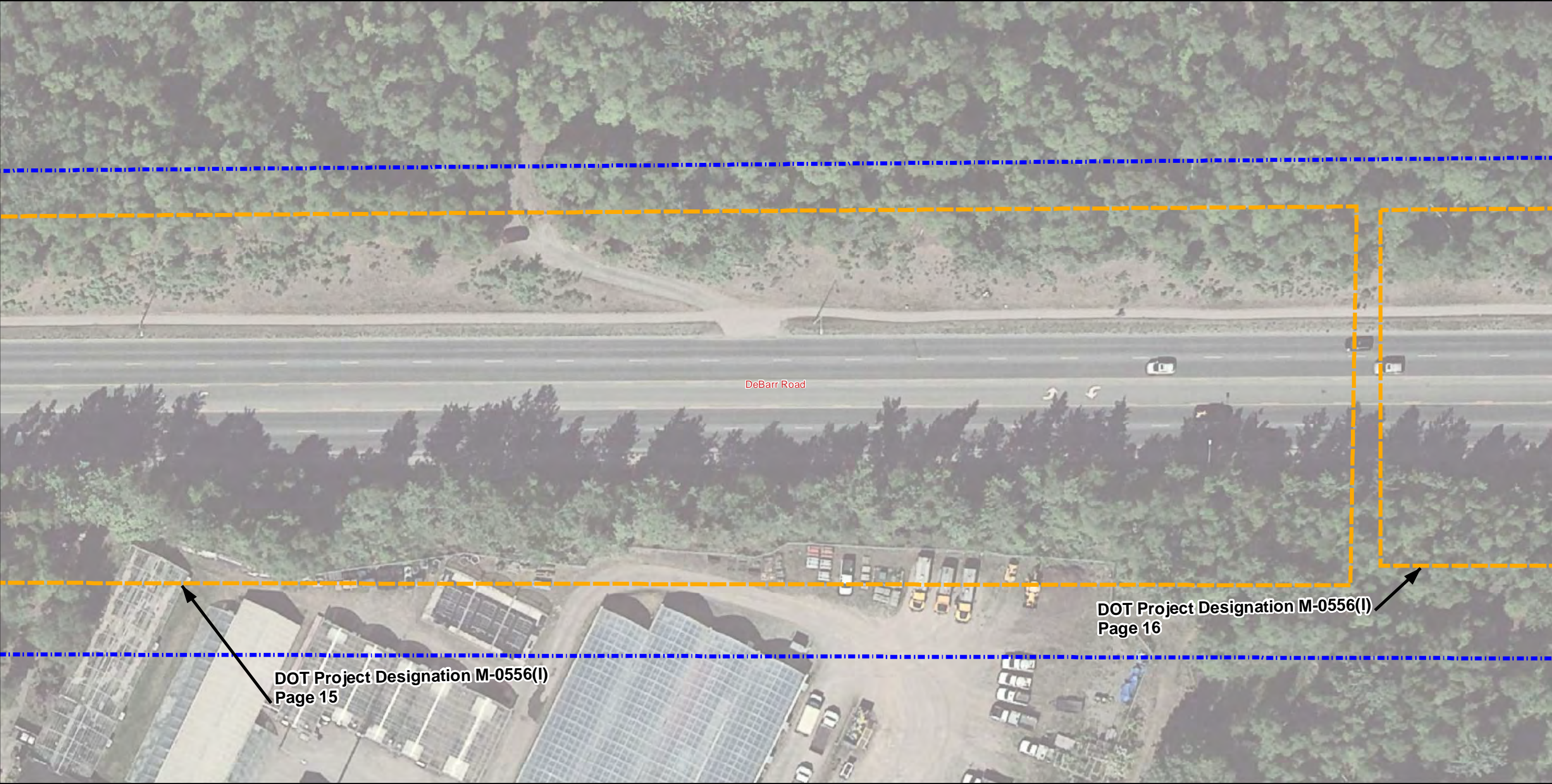
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Debarr Road: Bragaw Street to Muldoon Road



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Manhole/Catchbasin

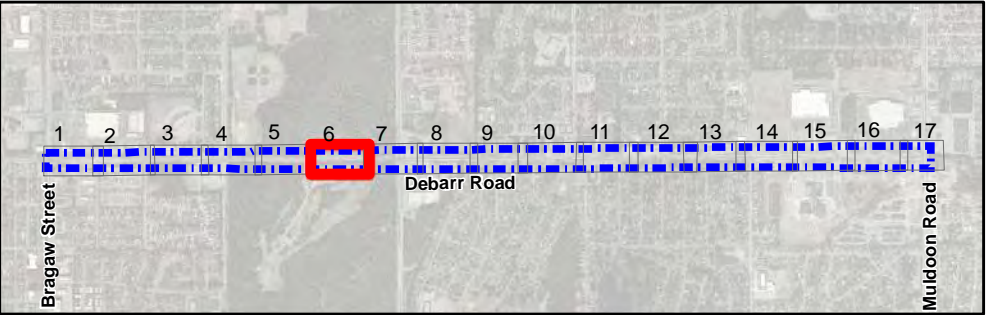
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Pipe Segment

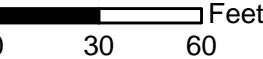
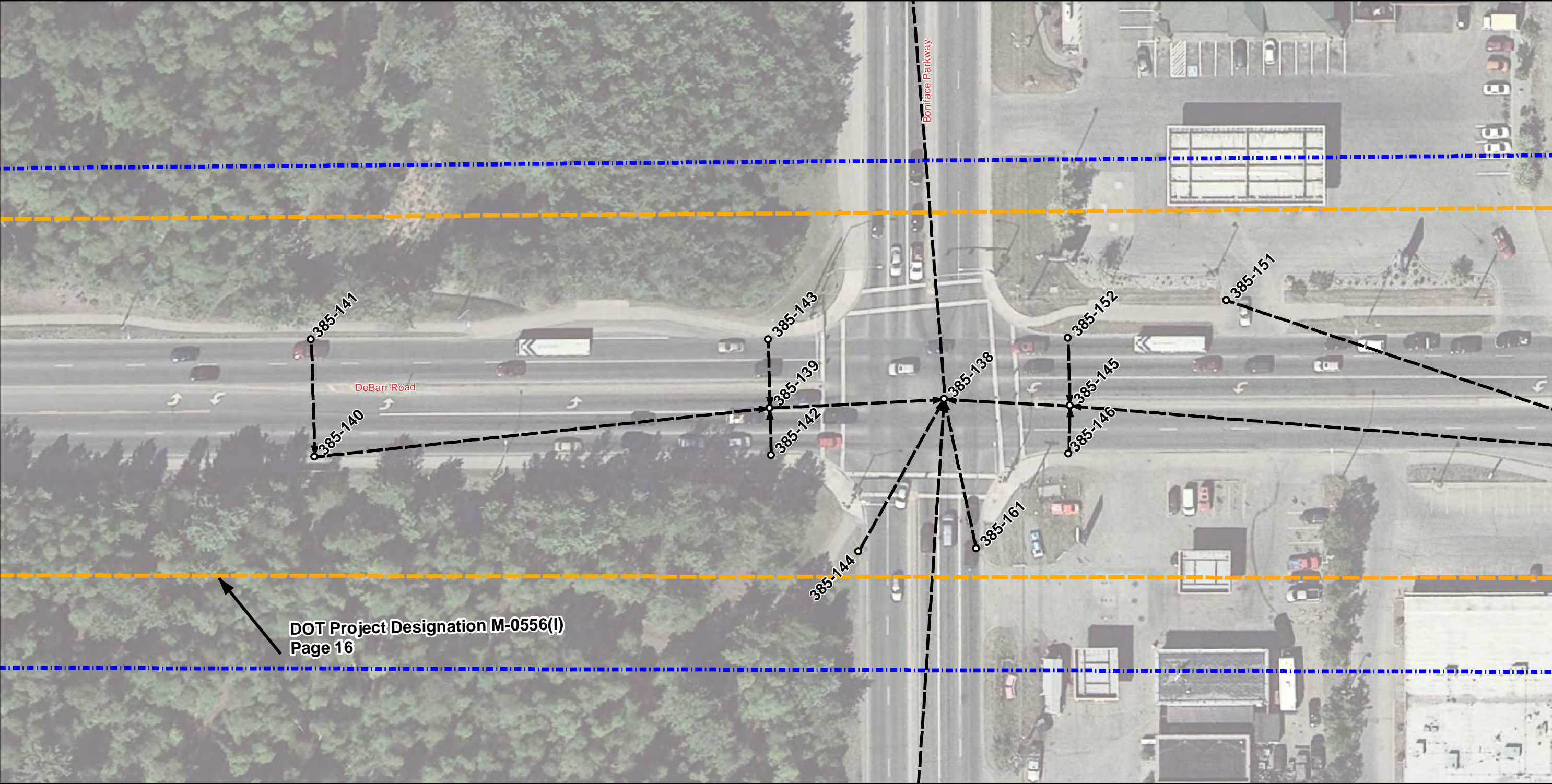
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Debarr Road: Bragaw Street to Muldoon Road



Legend

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Manhole/Catchbasin

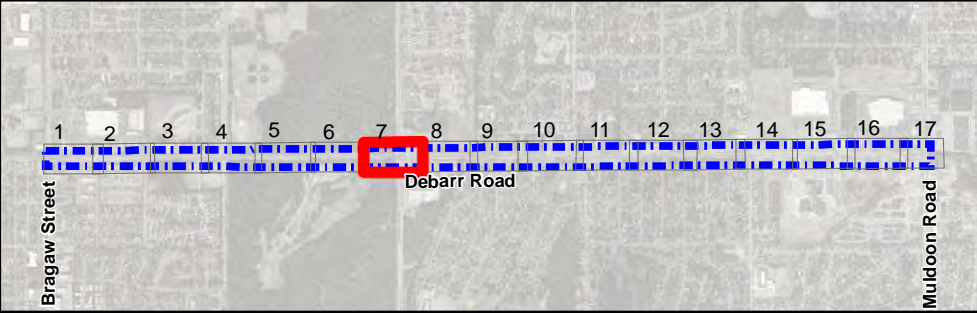
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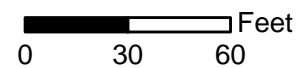
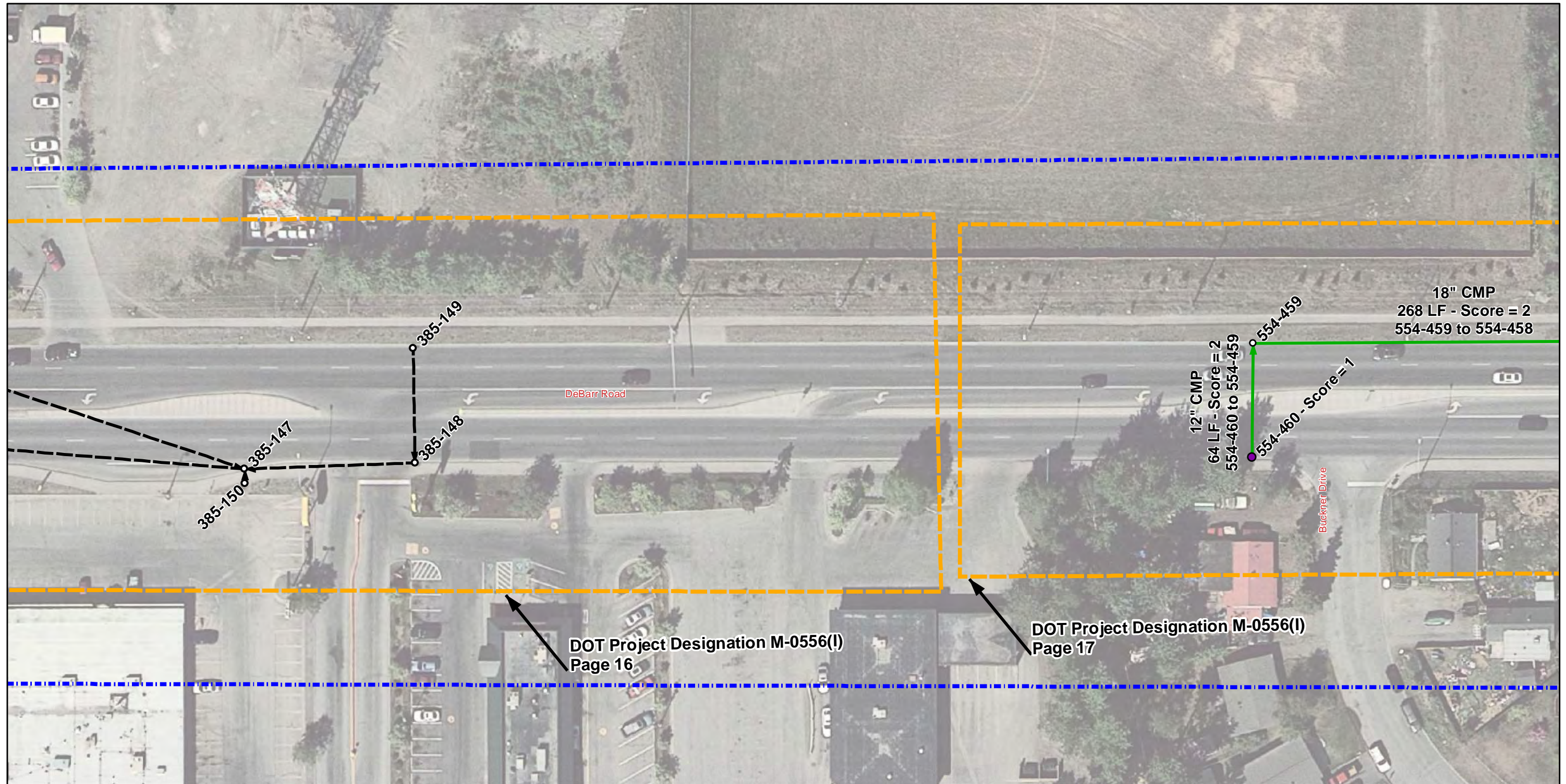
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Legend

Manhole/Catchbasin

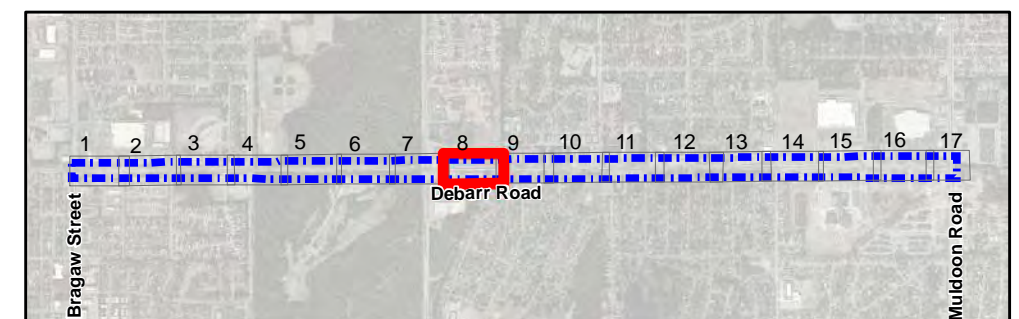
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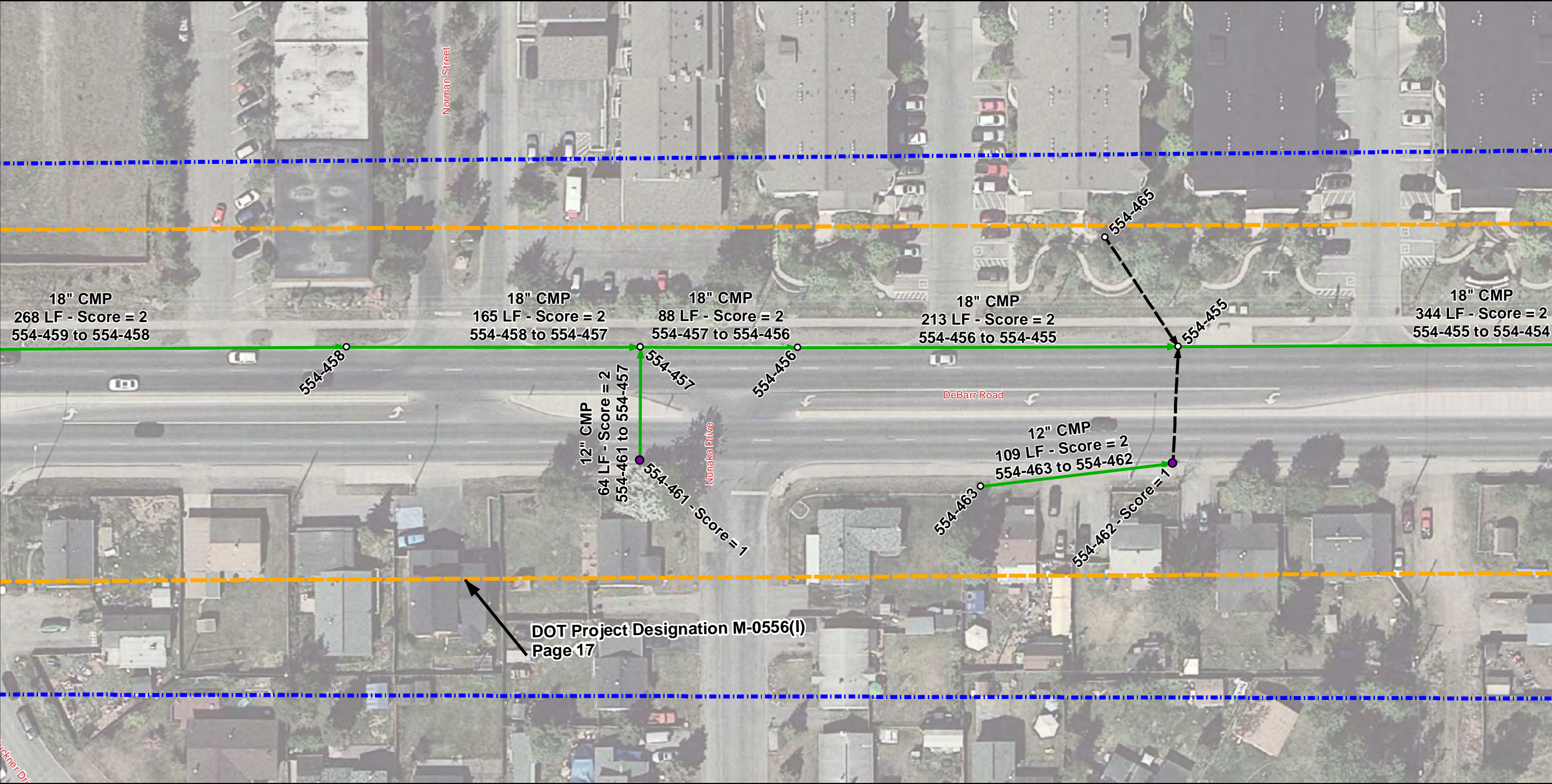
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Debarr Road: Bragaw Street to Muldoon Road



0 30 60 Feet

Legend

- Project Area
- Asbuilt Designation

Manhole/Catchbasin

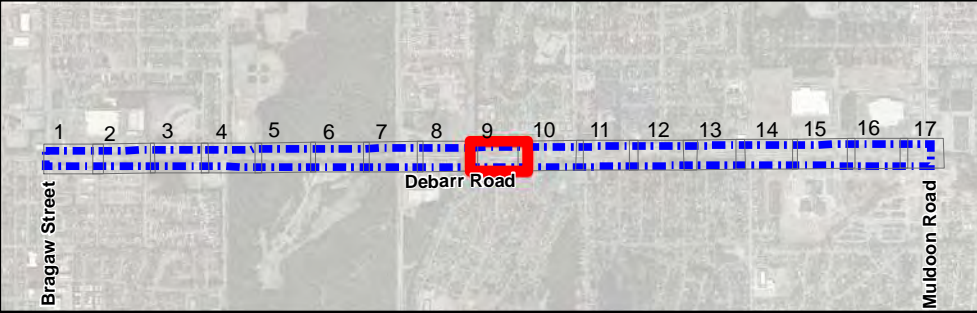
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Pipe Segment

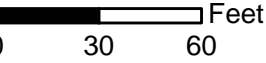
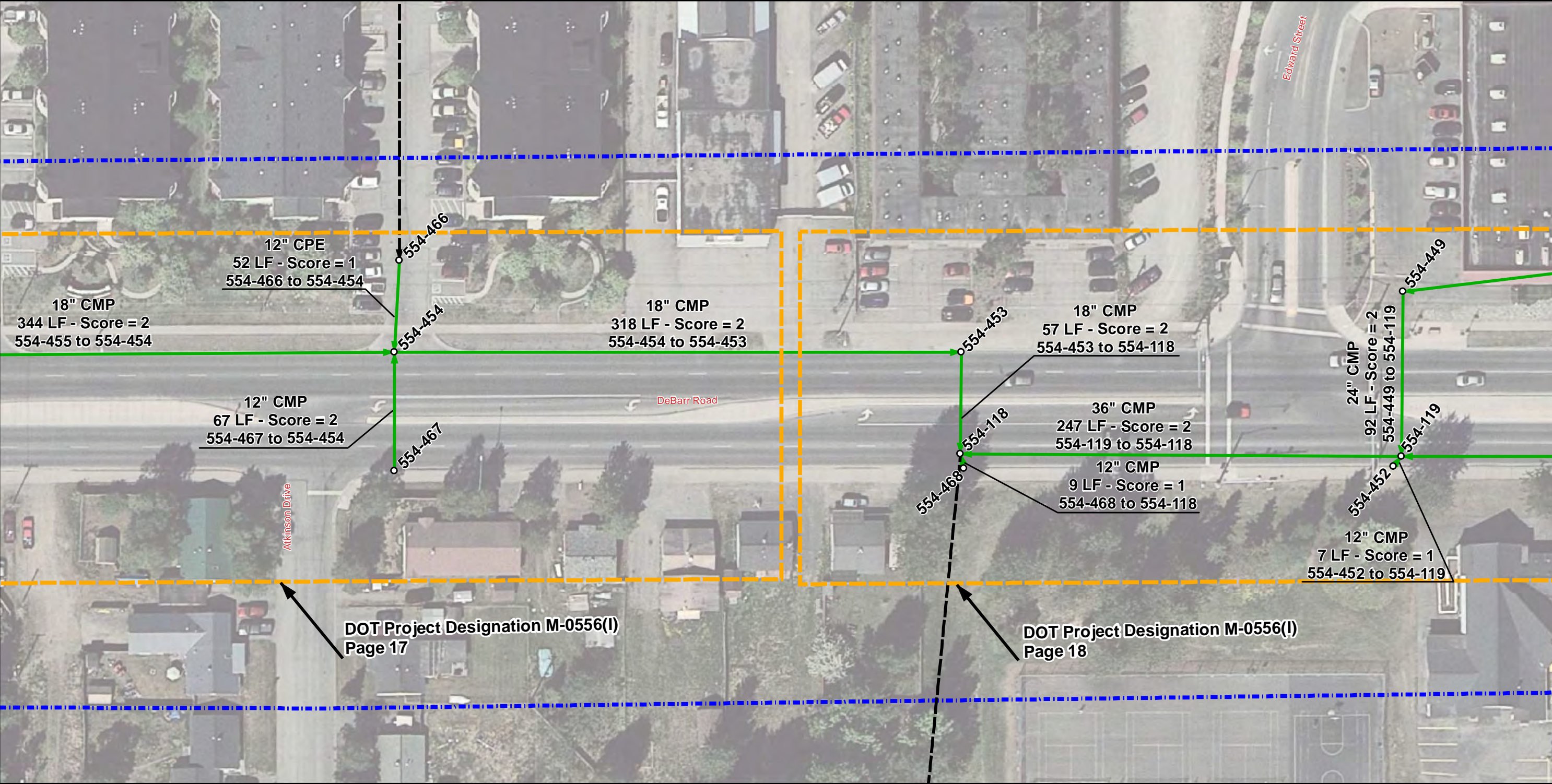
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Debarr Road: Bragaw Street to Muldoon Road



Legend

- Project Area
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Manhole/Catchbasin

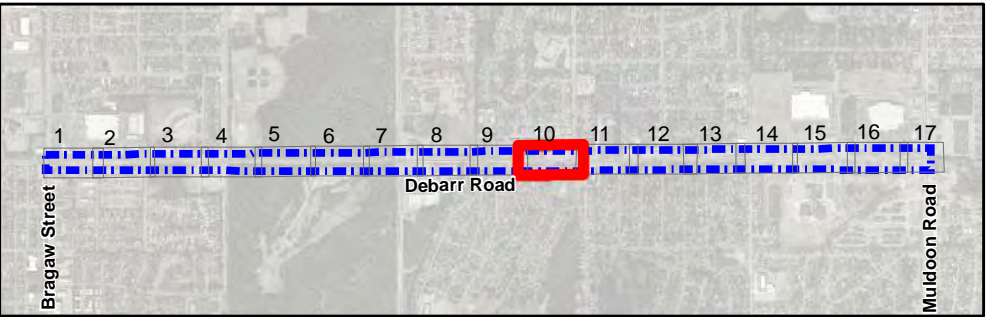
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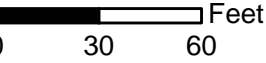
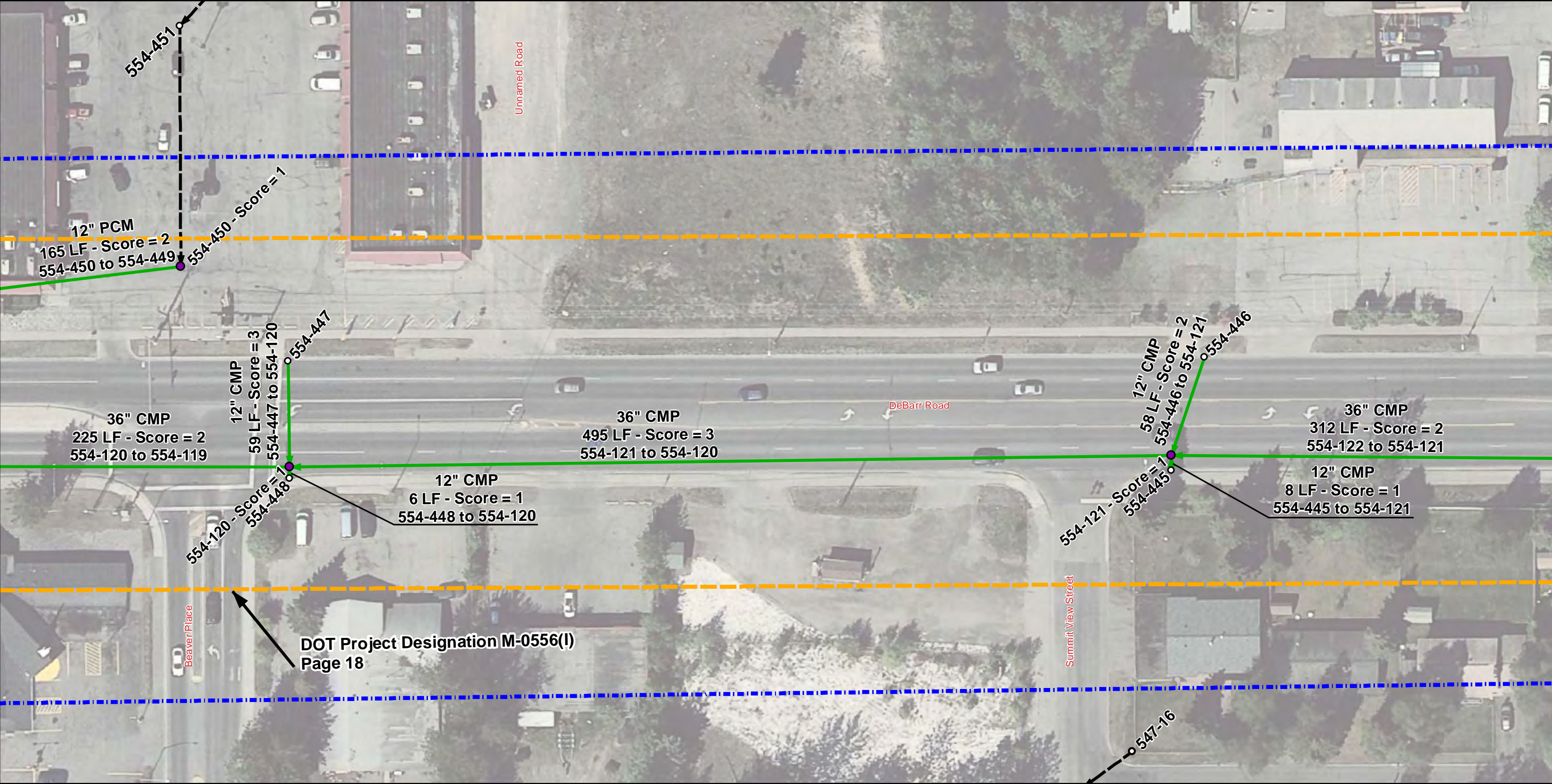
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Manhole/Catchbasin

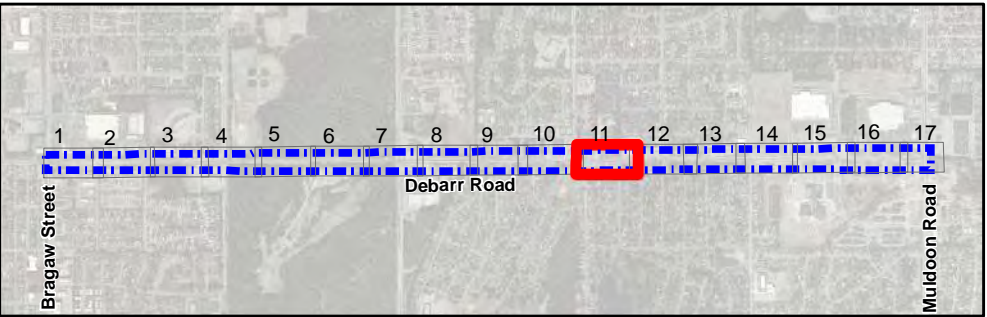
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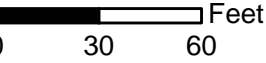
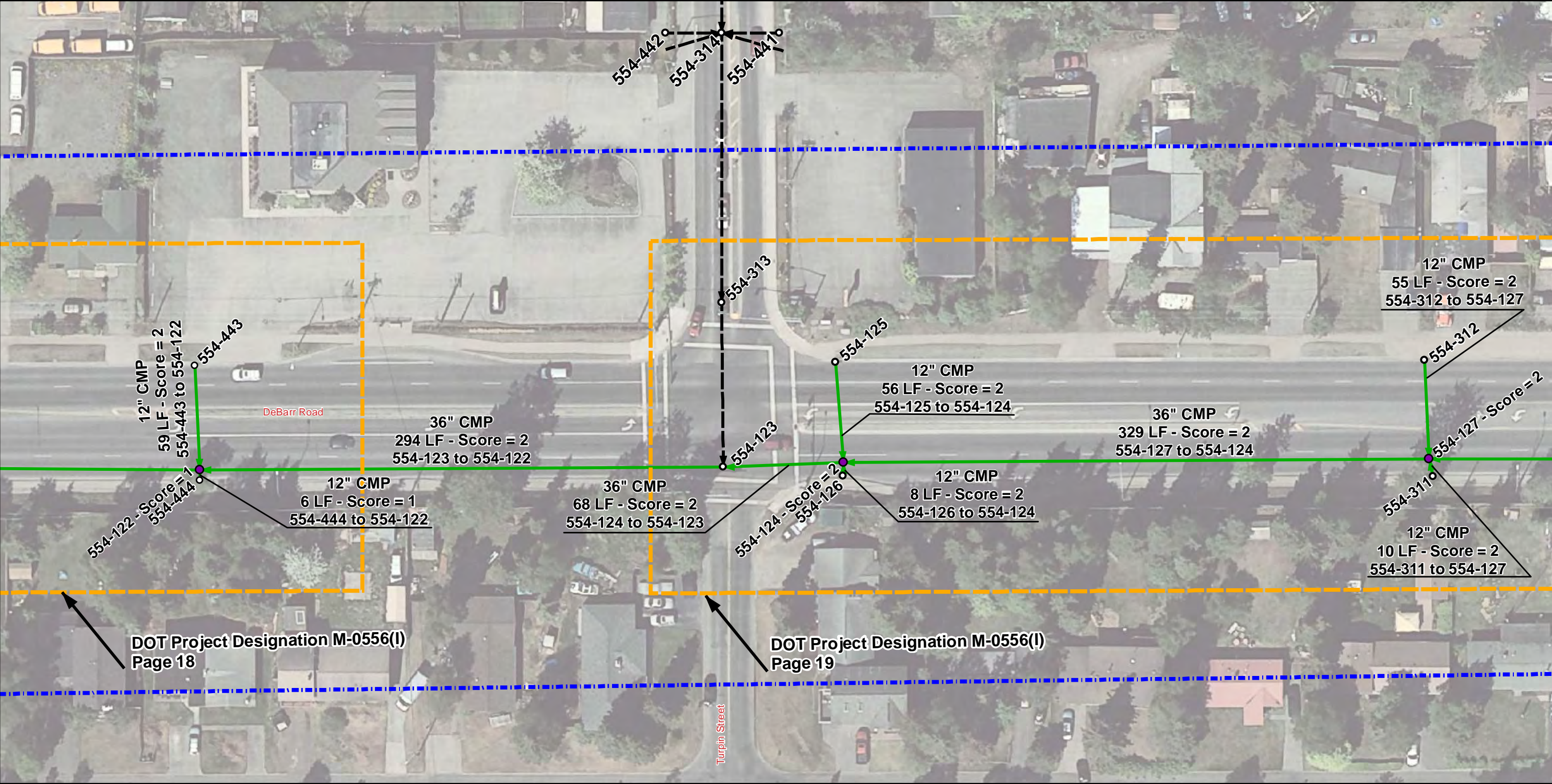
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Manhole/Catchbasin

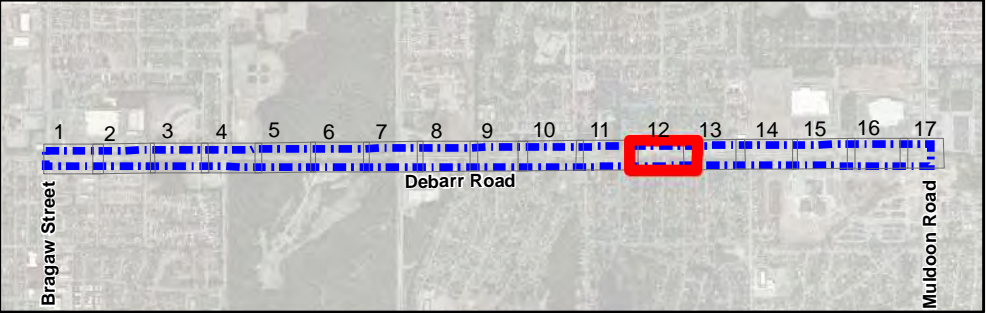
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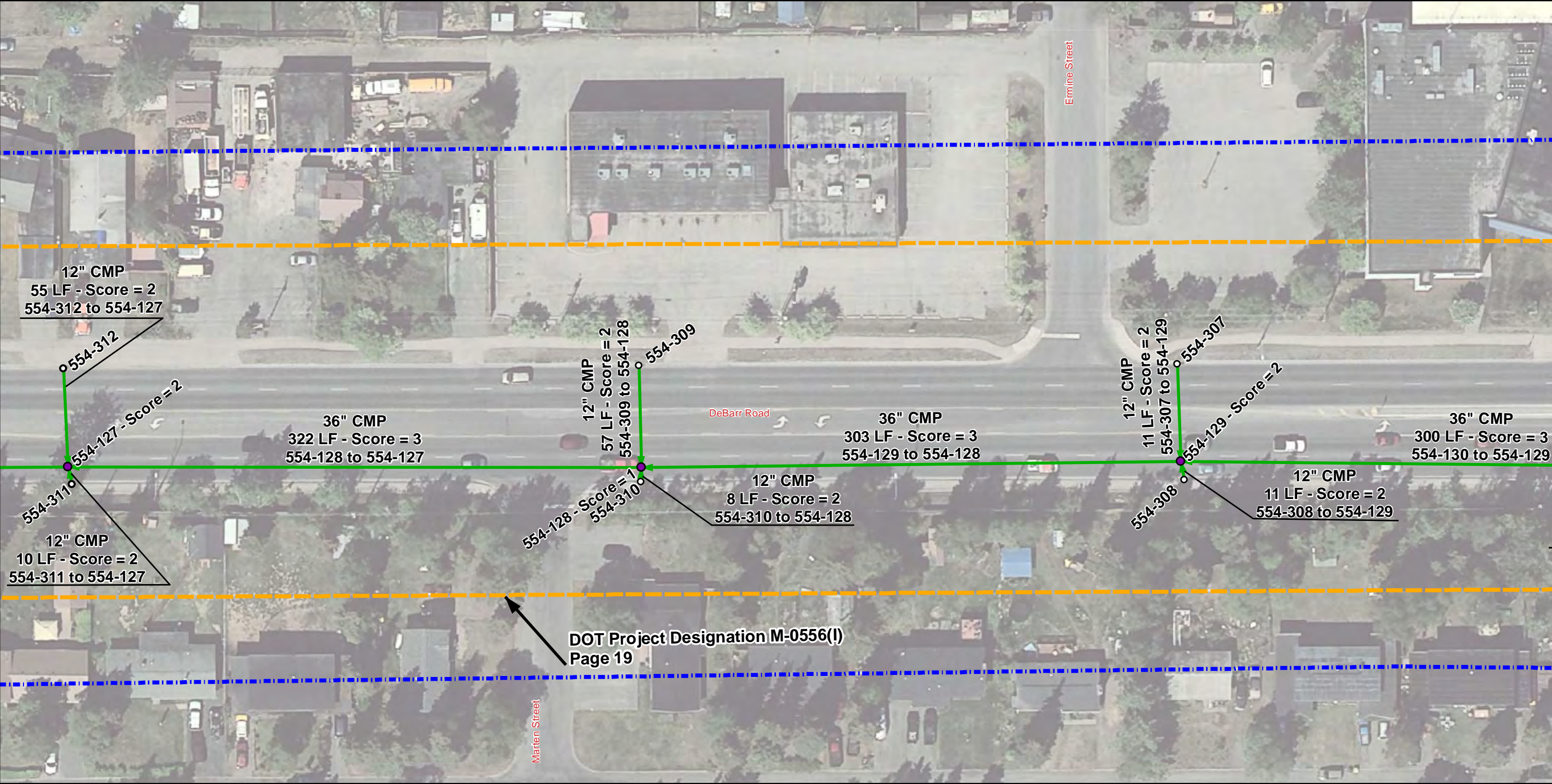
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Debarr Road: Bragaw Street to Muldoon Road



0 30 60 Feet

Legend

- Project Area
- Asbuilt Designation

Manhole/Catchbasin

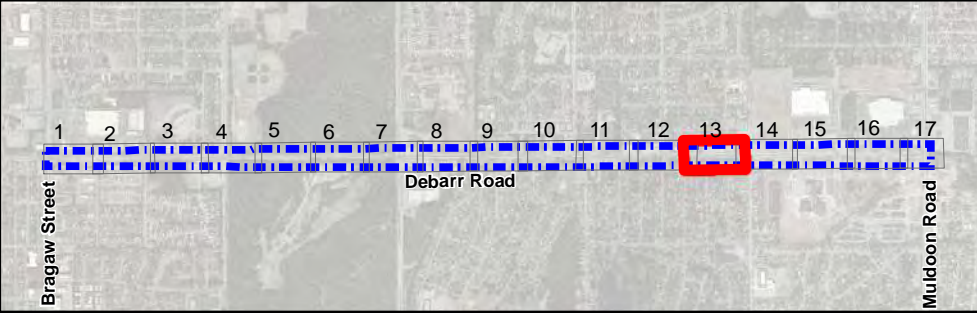
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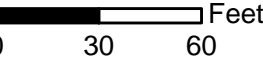
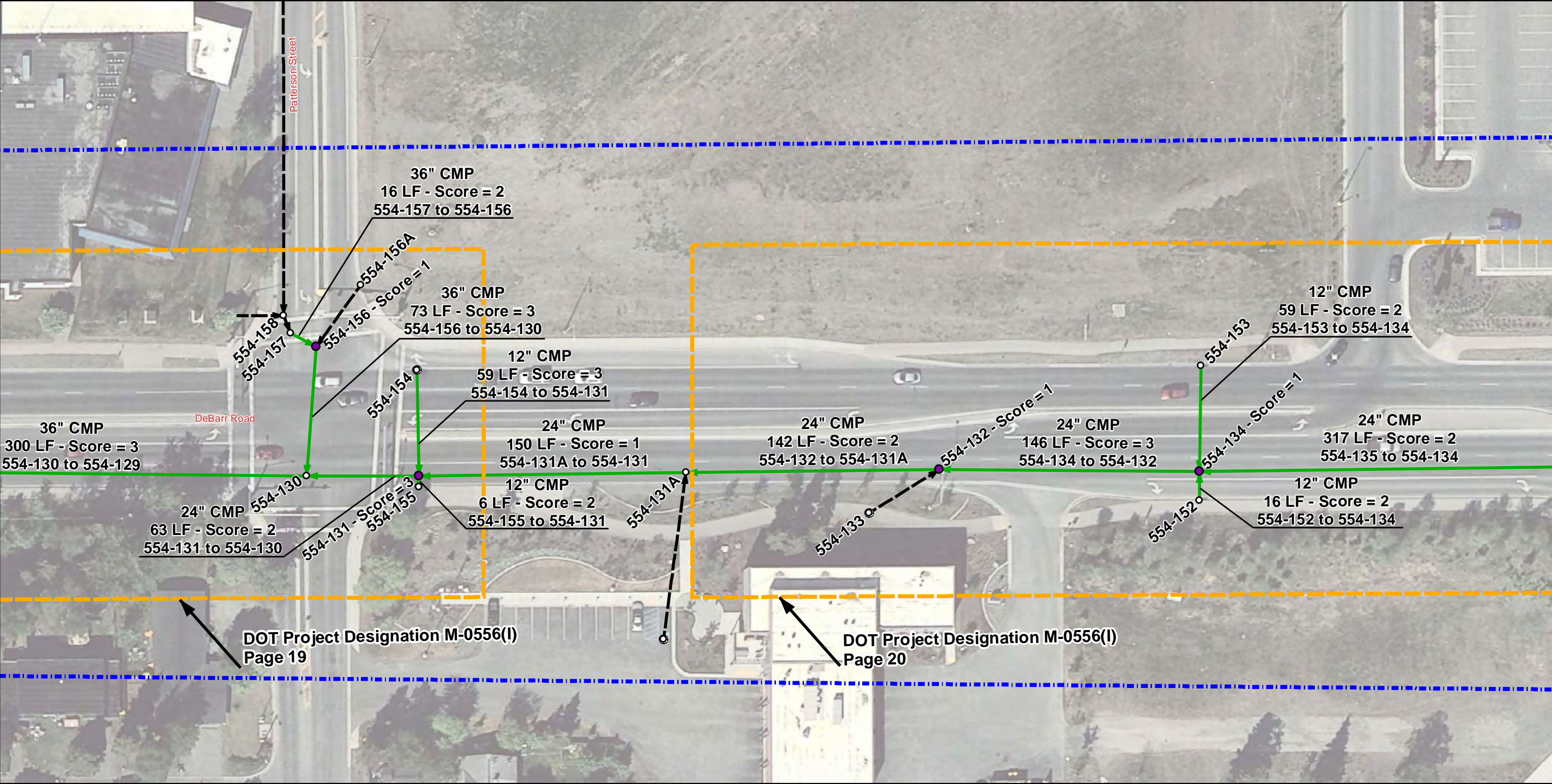
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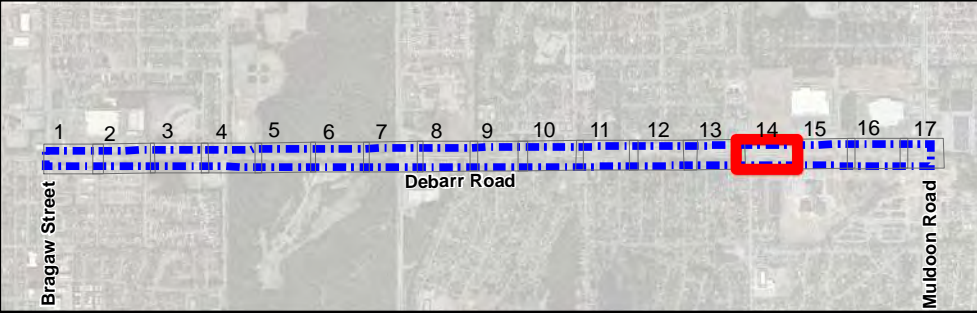
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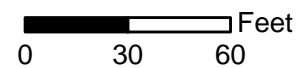
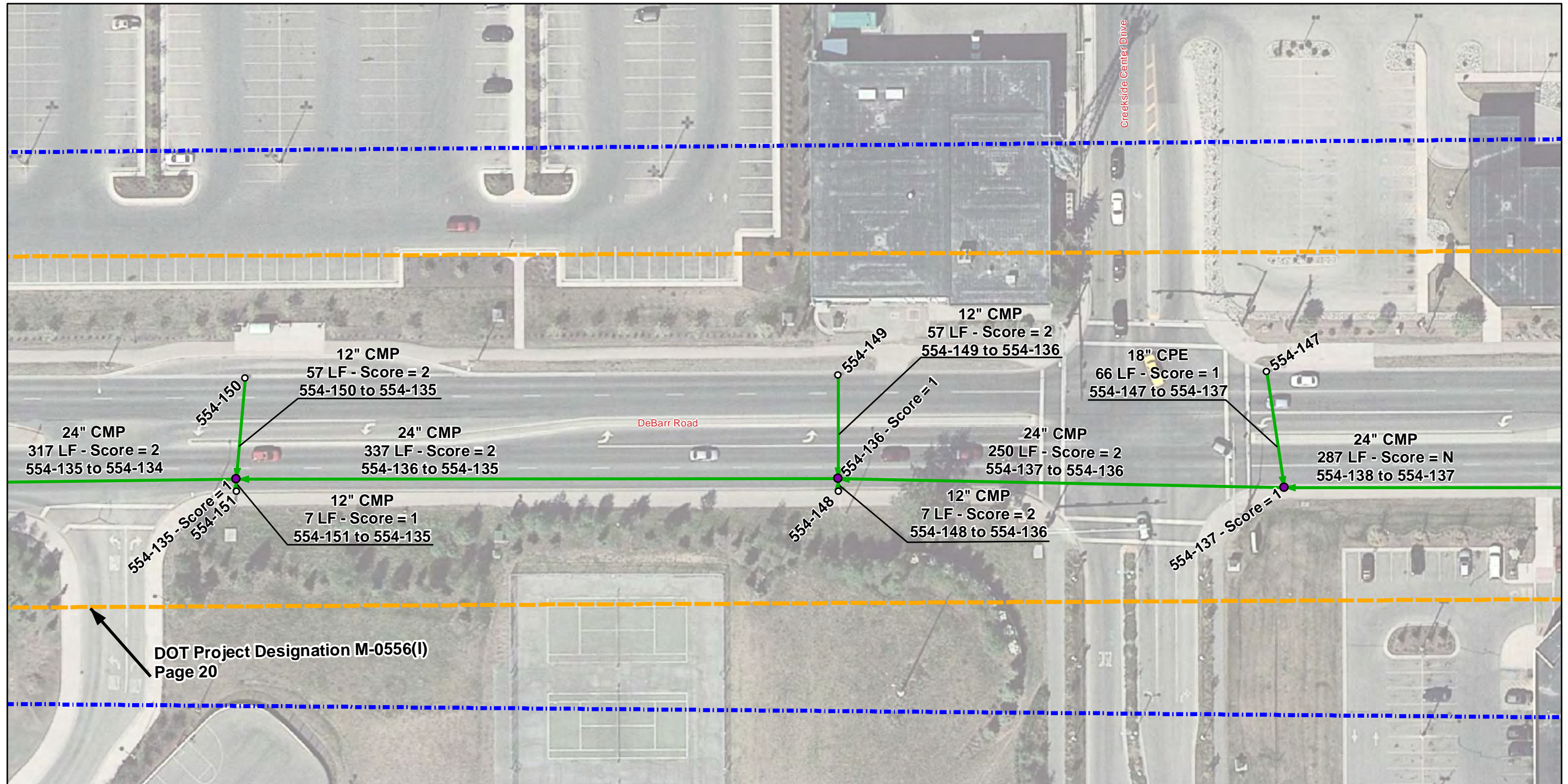
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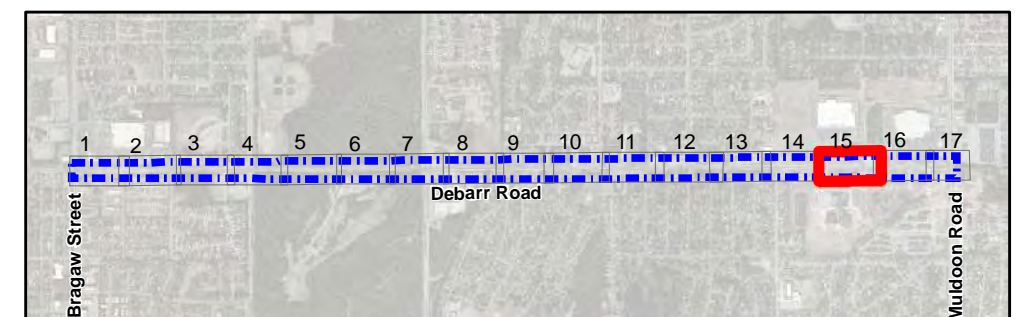
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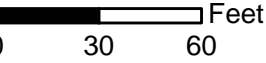
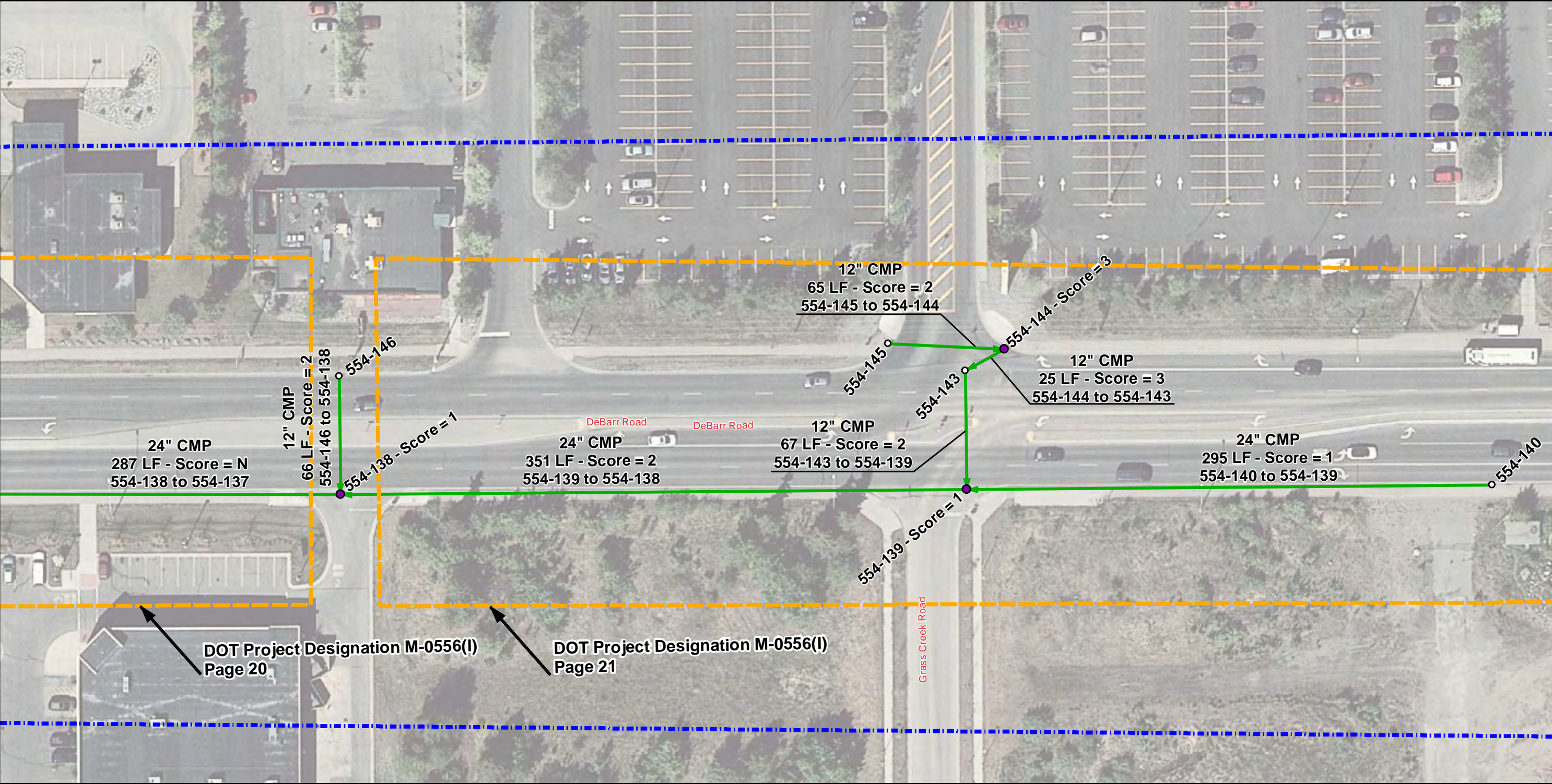
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Manhole/Catchbasin

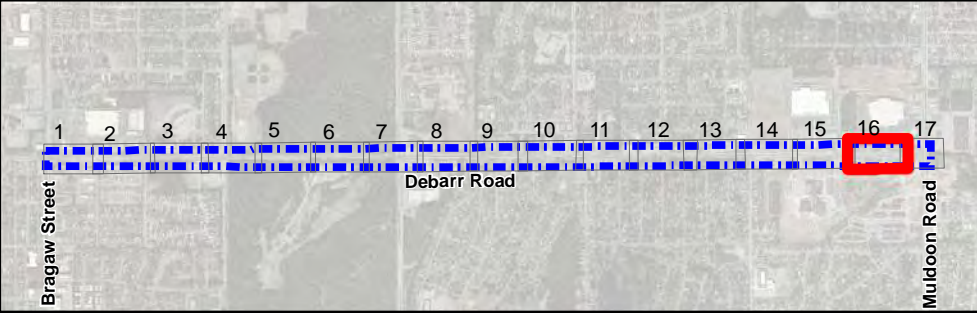
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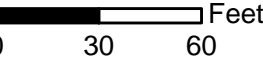
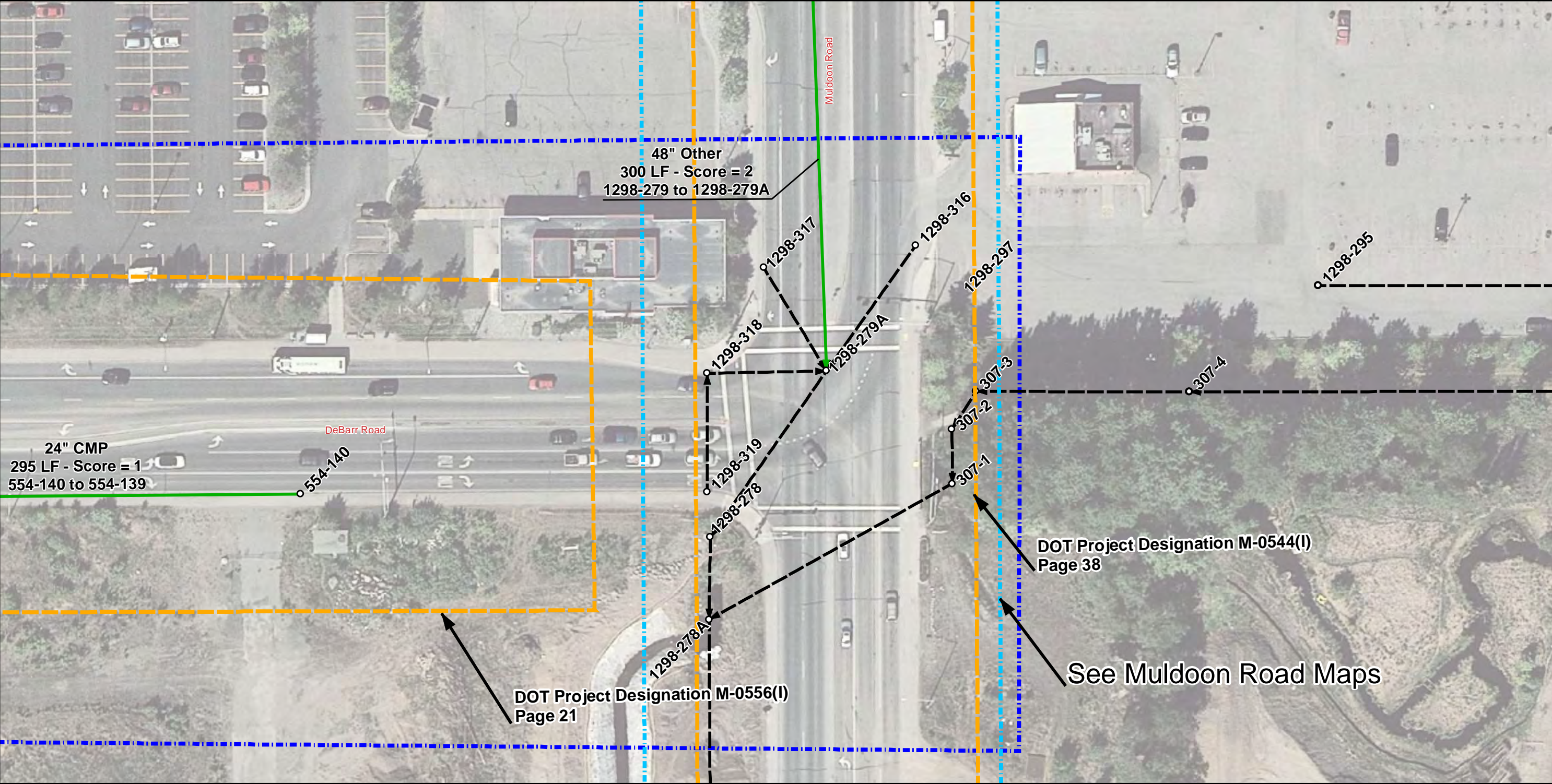
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Debarr Road: Bragaw Street to Muldoon Road



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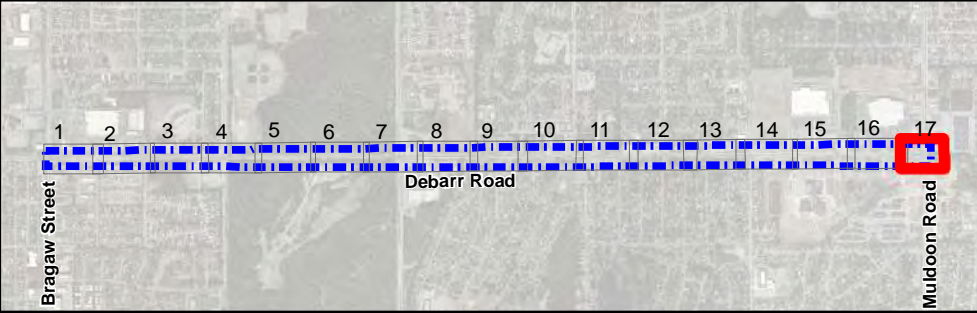
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CCTV Data Summary and Inspection Logs

CR NHS Storm Drain Condition Report
Proj. No. 0A31055 / Z591280000

	NHS Storm Drain Inspections Debarr Road (Bragaw Street to Muldoon Road)			Defect grades: 0=No Defect, 1=Minor Defect, 2=Minor to Moderate Defect, 3=Moderate Defect, 4=Significant Defect, 5=Most Significant Defect									
		Avg. Height	Material	Condition of Components									
Page # in Appendix A	Upstream Structure No.	Downstream Structure No.	Location	Pipe Dia. (in.)	Material	CCTV Complete	CCTV Date	CCTV Length (ft.)	GIS Length (ft.)	CCTV Direction	General Condition Grade Score	Flow Depth (in.)	Additional Comments
2	577-43	577-42	North Debarr east of Bragaw Street	30	CMP	Yes	11/6/2018	355	358	Downstream	4	2-3"	Inverts probed metal loss observed, discoloration and surface corrosion, high levels of debris, joint infiltration, ovality in pipe
	577-44	577-43	North Debarr east of Bragaw Street	30	CMP	Yes	11/6/2018	336	365	Upstream	4	2-3"	Inverts probed metal loss observed, surface corrosion, debris, hole in pipe, ovality in pipe
4	385-29	385-28	North Debarr Road east of Pine Street	18	CMP	No	9/25/2018	64	276	Downstream	3	0-1"	Unable to complete inspection due to debris, surface corrosion
	385-36	385-29	Debarr Road east of Pine Street	18	CMP	Yes	9/25/2018	19	9	Upstream	2	None	Surface corrosion in invert
	385-30	385-29	North Debarr Road east of Pine Street	18	CMP	Yes	9/25/2018	128	137	Upstream	2	Minimal	Surface corrosion visible in invert, debris in pipe
5	385-32	385-30	North Debarr Road east of Pine Street	18	CMP	Yes	9/25/2018	349	345	Downstream	2	Minimal	Surface corrosion in invert, debris in pipe, no major structural defects
	385-33	385-32	North Debarr Road east of Pine Street	18	CMP	Yes	9/25/2018	449	448	Upstream	2	Minimal	Surface corrosion in invert, debris in pipe, no major structural defects
8	554-460	554-459	Debarr Road west of Buckner Drive	12	CMP	Yes	7/12/2018	61	64	Downstream	2	Minimal	Surface corrosion/discoloration in invert, debris, no major defects observed
	554-459	554-458	North Debarr Road west of Norman Street	18	CMP	Yes	7/10/2018	268	268	Upstream	2	Minimal	Various debris, corrosion in invert, small deformations
9	554-458	554-457	North Debarr Road south of Norman Street	18	CMP	Yes	7/10/2018	168	165	Upstream	2	Minimal	Debris in downstream end, discoloration, surface corrosion in invert no major defects
	554-461	554-457	Debarr Road east of Norman Street	12	CMP	Yes	7/12/2018	64	64	Downstream	2	Minimal	Surface corrosion, debris, unable to evaluate invert
	554-457	554-456	North Debarr Road at Nunaka Drive	18	CMP	Yes	7/10/2018	82	88	Downstream	2	1-2"	Minimal debris in pipe, minor surface discoloration/corrosion, unable to observe invert
	554-456	554-455	North Debarr Road east of Nunaka Drive	18	CMP	Yes	7/12/2018	212	213	Upstream	2	0-2"	Pipe Cleaned, discoloration in bottom half of pipe, minimal corrosion in invert, spot corrosion throughout pipe
	554-463	554-462	South Debarr Road east of Nunaka Drive	12	CMP	Yes	7/12/2018	111	109	Upstream	2	2-3"	Debris, surface corrosion and discoloration, pipe repair
	554-455	554-454	North Debarr Road at Atkinson Drive	18	CMP	Yes	7/10/2018	348	344	Upstream	2	2-3"	No major defects observed, debris throughout pipe
10	554-466	554-454	North Debarr Road east of Atkinson Drive	12	CPEP	Yes	7/12/2018	57	52	Upstream	1	None	Pipe Cleaned, no major defects observed

CR NHS Storm Drain Condition Report
Proj. No. 0A31055 / Z591280000

	NHS Storm Drain Inspections Debarr Road (Bragaw Street to Muldoon Road)			Defect grades: 0=No Defect, 1=Minor Defect, 2=Minor to Moderate Defect, 3=Moderate Defect, 4=Significant Defect, 5=Most Significant Defect									
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10	554-467	554-454	North Debarr Road east of Atkinson Drive	12	CMP	Yes	7/12/2018	64	67	Upstream	2	None	Pipe Cleaned, surface discoloration and corrosion, surface corrosion at joints
	554-454	554-453	North Debarr Road east of Atkinson Drive	18	CMP	Yes	7/10/2018	315	318	Upstream	2	1-2"	Surface corrosion/discoloration in invert, no major defects observed
	554-453	554-118	Debarr Road west of Edward Street	18	CMP	Yes	7/10/2018	55	57	Downstream	2	0-1"	Surface corrosion/discoloration in invert, no major defects observed
	554-468	554-118	South Debarr Road west of Edward Street	12	CMP	Yes	7/12/2018	6	9	Downstream	1	None	No major defects observed
	554-119	554-118	South Debarr Road at Edward Street	36	CMP	Yes	7/13/2018	242	248	Upstream	2	2-3"	Minimal corrosion at flow line, debris, no major defects
	554-452	554-119	South Debarr Road at Edward Street	12	CMP	Yes	7/12/2018	4	7	Downstream	1	None	No major defects observed
	554-449	554-119	Debarr Road east of Edward Street	24	CMP	Yes	7/10/2018	86	92	Downstream	2	Minimal	Surface corrosion/discoloration in invert, no major defects observed
11	554-450	554-449	North Debarr Road east of Edward Street	12	CMP	No	9/6/2018	21	165	Downstream	2	None	Debris stopped inspection, unable to investigate invert condition, corrosion at historic flow line
	554-120	554-119	South Debarr Road at Beaver Place	36	CMP	Yes	7/13/2018	220	225	Upstream	2	3-4"	Corrosion at flow line and in invert, minor debris at joints, no major defects
	554-447	554-120	Debarr Road east of Beaver Place	12	CMP	Yes	7/19/2018	55	59	Upstream	3	None	Pipe Cleaned, corrosion visible in invert
	554-448	554-120	Debarr Road east of Beaver Place	12	CMP	Yes	7/12/2018	5	7	Downstream	1	None	Debris in pipe, surface corrosion visible at joint
	554-121	554-120	South Debarr Road east of Beaver Place	36	CMP	Yes	7/13/2018	491	495	Downstream	3	2-3"	Surface corrosion at flow line and in invert, minor debris at joints, crushed pipe at 386 LF
	554-446	554-121	Debarr Road East of Summit View Street	12	CMP	Yes	7/19/2018	59	58	Upstream	2	Minimal	Surface corrosion, debris
	554-445	554-121	South Debarr Road East of Summit View Street	12	CMP	No	N/A	N/A	8	N/A	1	None	Pipe Photographed. Discoloration in invert, no major defects observed
	554-122	554-121	South Debarr Road East of Summit View Street	36	CMP	Yes	7/13/2018	308	312	Upstream	2	3-4"	Corrosion at flow line and in invert, minor debris at joints, no major defects
12	554-443	554-122	Debarr Road west of Turpin Street	12	CMP	Yes	7/19/2018	55	59	Upstream	2	Minimal	Surface corrosion, debris
	554-444	554-122	South Debarr Road west of Turpin Street	12	CMP	No	N/A	N/A	6	N/A	1	None	Pipe Photographed, discoloration in invert, no major defects

CR NHS Storm Drain Condition Report
Proj. No. 0A31055 / Z591280000

	NHS Storm Drain Inspections			Defect grades: 0=No Defect, 1=Minor Defect, 2=Minor to Moderate Defect, 3=Moderate Defect, 4=Significant Defect, 5=Most Significant Defect									
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12	554-123	554-122	South Debarr Road at Turpin Street	36	CMP	Yes	7/13/2018	298	294	Upstream	2	3-4"	Corrosion at flow line and in invert, minor debris at joints, no major defects
	554-124	554-123	South Debarr Road at Turpin Street	36	CMP	Yes	7/13/2018	55	68	Downstream	2	2-3"	Discoloration, debris, no major defects
	554-125	554-124	Debarr Road east of Turpin Street	12	CMP	Yes	7/19/2018	55	56	Upstream	2	Minimal	Pipe cleaned, surface corrosion and discoloration
	554-126	554-124	South Debarr Road east of Turpin Street	12	CMP	No	N/A	N/A	8	N/A	2	Minimal	Corrosion in invert, no major defects observed
	554-127	554-124	South Debarr Road east of Turpin Street	36	CMP	Yes	7/13/2018	325	329	Upstream	2	3-4"	Corrosion at flow line and in invert, minor debris at joints, no major defects
	554-312	554-127	Debarr Road east of Turpin Street	12	CMP	Yes	7/19/2018	55	55	Upstream	2	None	Debris, surface corrosion
	554-311	554-127	South Debarr Road east of Turpin Street	12	CMP	No	N/A	N/A	10	N/A	2	Minimal	Corrosion visible in invert, debris, no major defects
13	554-128	554-127	South Debarr Road at Marten Street	36	CMP	Yes	7/13/2018	320	322	Downstream	3	2-3"	Leaking joints, corrosion at flow line and invert, debris at joints
	554-309	554-128	Debarr Road east of Marten Street	12	CMP	Yes	7/19/2018	56	57	Upstream	2	None	Debris and surface corrosion
	554-310	554-128	South Debarr Road east of Marten Street	12	CMP	No	N/A	N/A	8	N/A	2	Minimal	Corrosion visible in invert, debris, no major defects
	554-129	554-128	South Debarr Road at Ermine Street	36	CMP	Yes	7/13/2018	301	303	Upstream	3	1-2"	Inverts probed metal loss present, corrosion and discoloration, debris
	554-307	554-129	Debarr Road east of Ermine Street	12	CMP	Yes	7/19/2018	53	55	Upstream	2	None	Surface corrosion and various amounts of debris
	554-308	554-129	South Debarr Road east of Ermine Street	12	CMP	No	N/A	N/A	11	N/A	2	None	Pipe Photographed, discoloration and surface corrosion in invert
	554-130	554-129	South Debarr west of Patterson Street	36	CMP	Yes	7/16/2018	301	300	Upstream	3	2-3"	Inverts probed metal loss present, corrosion and discoloration, debris
14	554-159	554-157	North Debarr Road at Patterson Street	36	CMP	No	9/6/2018	106	295	Upstream	N/A	N/A	Pipe passes through structure 554-158, lead pipe entry to main, pipe footage missing, no defects present requiring emergency repair
	554-157	554-156	North Debarr Road at Patterson Street	36	CMP	Yes	9/6/2018	6	16	Upstream	2	2-3"	Surface corrosion, no major defects
	554-156A	554-156	North Debarr Road at Patterson Street	24	HDPE	No	N/A	N/A	43	N/A	0	N/A	New Pipe
	554-156	554-130	Debarr Road at Patterson Street	Ellipse	CMP	Yes	9/6/2018	67	73	Downstream	3	4-5"	23x36" oval pipe, surface corrosion, debris
	554-131	554-130	South Debarr at Patterson Street	24	CMP	Yes	7/16/2018	57	63	Downstream	2	0-1"	Minor corrosion and debris, no major defects

CR NHS Storm Drain Condition Report
Proj. No. 0A31055 / Z591280000

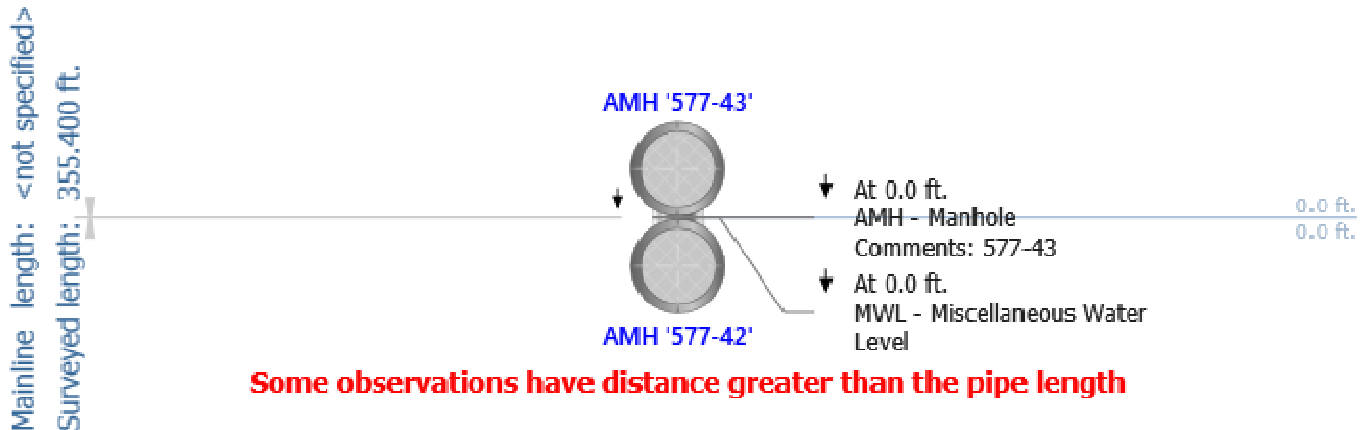
	NHS Storm Drain Inspections Debarr Road (Bragaw Street to Muldoon Road)			Defect grades: 0=No Defect, 1=Minor Defect, 2=Minor to Moderate Defect, 3=Moderate Defect, 4=Significant Defect, 5=Most Significant Defect									
		Avg. Height	Material	Condition of Components									
Page # in Appendix A	Upstream Structure No.	Downstream Structure No.	Location	Pipe Dia. (in.)	Material	CCTV Complete	CCTV Date	CCTV Length (ft.)	GIS Length (ft.)	CCTV Direction	General Condition Grade Score	Flow Depth (in.)	Additional Comments
14	554-154	554-131	Debarr east of Patterson Street	12	CMP	Yes	7/19/2018	54	59	Upstream	3	None	Pipe appears abandoned, debris and surface corrosion
	554-155	554-131	South Debarr east of Patterson Street	12	CMP	No	N/A	N/A	6	N/A	2	None	Pipe half full of debris, photographed, surface corrosion
	554-131A	554-131	South Debarr east of Patterson Street	24	CMP	Yes	7/16/2018	134	150	Upstream	1	0-1"	Minor surface corrosion and debris, possible bellies
	554-132	554-131A	South Debarr east of Patterson Street	24	CMP	Yes	7/16/2018	160	142	Downstream	2	Minimal	Surface corrosion in invert, debris in pipe, no major structural defects
	554-133	554-132	South Debarr east of Patterson Street	18	CMP	No	N/A	N/A	47	N/A	3	None	Pipe Photographed, appears abandoned, debris and surface corrosion
	554-134	554-132	South Debarr east of Patterson Street	24	CMP	Yes	7/16/2018	142	146	Upstream	3	Minimal	Minimal debris and surface corrosion in invert, pipe deformation
	554-153	554-134	Debarr east of Patterson Street	12	CMP	Yes	7/19/2018	49	60	Upstream	2	None	Debris and surface corrosion
	554-152	554-134	South Debarr east of Patterson Street	12	CMP	No	N/A	N/A	16	N/A	3	None	Pipe Photographed, surface corrosion and metal loss observed
	554-135	554-134	South Debarr east of Patterson Street	24	CMP	Yes	7/16/2018	314	317	Downstream	2	2-3"	Hole at joint at 50 LF, minor corrosion in invert, minor debris
15	554-150	554-135	Debarr east of Patterson Street	12	CMP	Yes	7/17/2018	55	57	Upstream	2	Minimal	Surface corrosion, debris
	554-151	554-135	South Debarr west of Creekside Center Drive	12	CMP	No	N/A	N/A	7	N/A	1	None	No major defects, debris in pipe
	554-136	554-135	South Debarr west of Creekside Center Drive	24	CMP	Yes	7/16/2018	341	337	Upstream	2	Minimal	Multiple bellies, debris in pipe, discoloration and surface corrosion in invert, pipe deformation
	554-149	554-136	Debarr west of Creekside Center Drive	12	CMP	Yes	7/17/2018	54	58	Upstream	2	Minimal	Surface corrosion, debris
	554-148	554-136	South Debarr west of Creekside Center Drive	12	CMP	No	N/A	N/A	7	N/A	2	None	Pipe 1/3 full of debris, surface corrosion visible, unable to see invert
	554-137	554-136	South Debarr at Creekside Drive	24	CMP	Yes	7/17/2018	248	250	Downstream	2	Minimal	Discoloration and surface corrosion, debris, no major structural defects
	554-147	554-137	Debarr east of Creekside Center Drive	18	CPEP	Yes	7/17/2018	64	66	Upstream	1	0-1"	No major defects observed
	554-138	554-137	South Debarr east of Creekside Center Drive	24	CMP	Yes	7/17/2018	285	287	Downstream	N/A	N/A	Pipe Footage Missing, no defects observed requiring emergency repair
16	554-146	554-138	Debarr Road east of Creekside Center Drive	12	CMP	Yes	7/17/2018	60	66	Upstream	2	Minimal	Surface corrosion, debris

CR NHS Storm Drain Condition Report
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	NHS Storm Drain Inspections Debarr Road (Bragaw Street to Muldoon Road)			Defect grades: 0=No Defect, 1=Minor Defect, 2=Minor to Moderate Defect, 3=Moderate Defect, 4=Significant Defect, 5=Most Significant Defect									
		Avg. Height	Material	Condition of Components									
Page # in Appendix A	Upstream Structure No.	Downstream Structure No.	Location	Pipe Dia. (in.)	Material	CCTV Complete	CCTV Date	CCTV Length (ft.)	GIS Length (ft.)	CCTV Direction	General Condition Grade Score	Flow Depth (in.)	Additional Comments
16	554-139	554-138	South Debarr Road west of Muldoon Road	24	CMP	Yes	7/17/2018	348	351	Downstream	2	0-1'	Discoloration and surface corrosion, debris, no major structural defects
	554-145	554-144	North Debarr Road west of Muldoon Road	12	CMP	Yes	9/6/2018	67	65	Upstream	2	1-2"	Discoloration/surface corrosion, minor debris, no major structural defects
	554-144	554-143	North Debarr Road west of Muldoon Road	12	CMP	Yes	9/6/2018	25	25	Downstream	3	Minimal	Debris, surface corrosion, unable to verify condition of invert
	554-143	554-139	Debarr Road west of Muldoon Road	12	CMP	Yes	7/17/2018	64	67	Upstream	2	0-1"	Surface corrosion, debris
	554-140	554-139	South Debarr Road west of Muldoon Road	24	CMP	Yes	7/17/2018	305	295	Upstream	1	Minimal	Debris, no major defects

Main Inspections Pipe Run

Project name:	Mainline ID:	City:	Street:
Debarr storm cctv project	577-43 to 577-42	Anchorage	Debarr
Start date/time:	Direction:	Weather:	Location code:
11/6/2018 12:59 PM	D		
Shape:	Material:	Height:	Width:
C	CMP	30 in.	

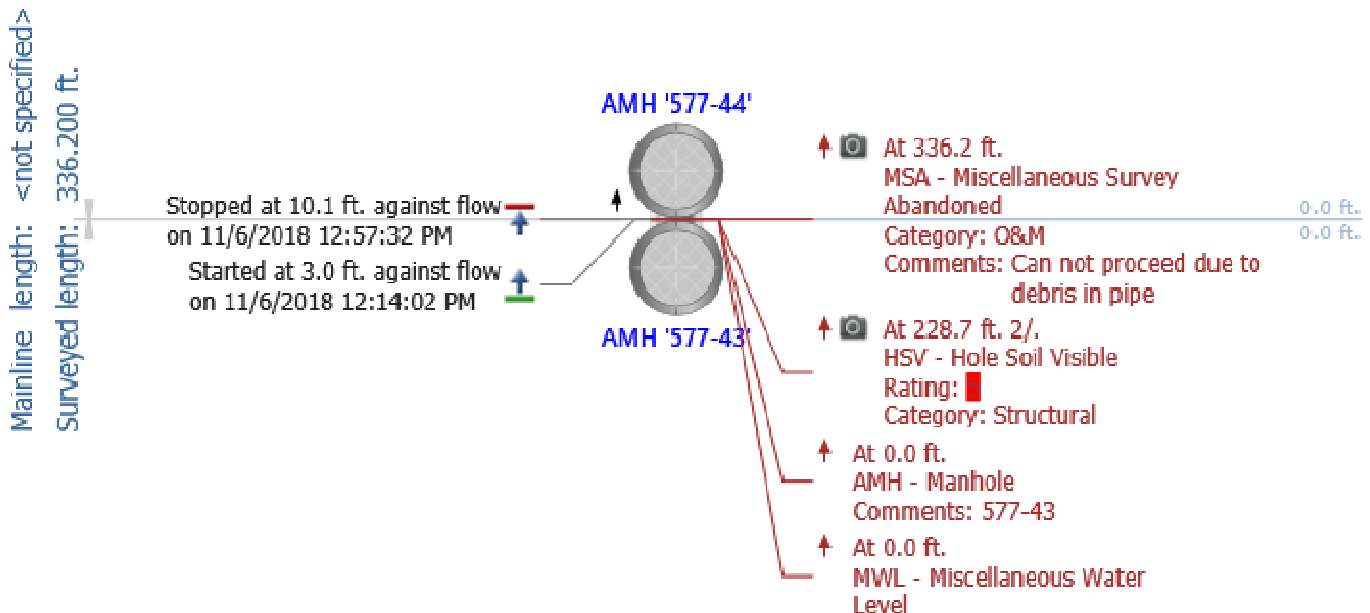


Notes: 577-43 to 577-42

- 30-in. CMP
- 355 LF
- Surface corrosion in bottom half of pipe
- Evidence of infiltration at joints, debris and discoloration/surface corrosion visible
- 3-5" of debris, flow creating channel through debris
- Discoloration in top of pipe
- Unable to view invert due to flow/debris, invert probed, metal loss observed
- Ovality in pipe, difficult to observe due to quality of survey, approximately 5-10% loss of cross sectional area in various sections of the pipe
- Flow: 2-3"
- Grade score of: 4

Main Inspections Pipe Run

Project name:	Mainline ID:	City:	Street:
Debarr storm cctv project	577-44 to 577-43	Anchorage	Debarr
Start date/time:	Direction:	Weather:	Location code:
11/6/2018 12:14 PM	U		
Shape:	Material:	Height:	Width:
C	CMP	30 in.	

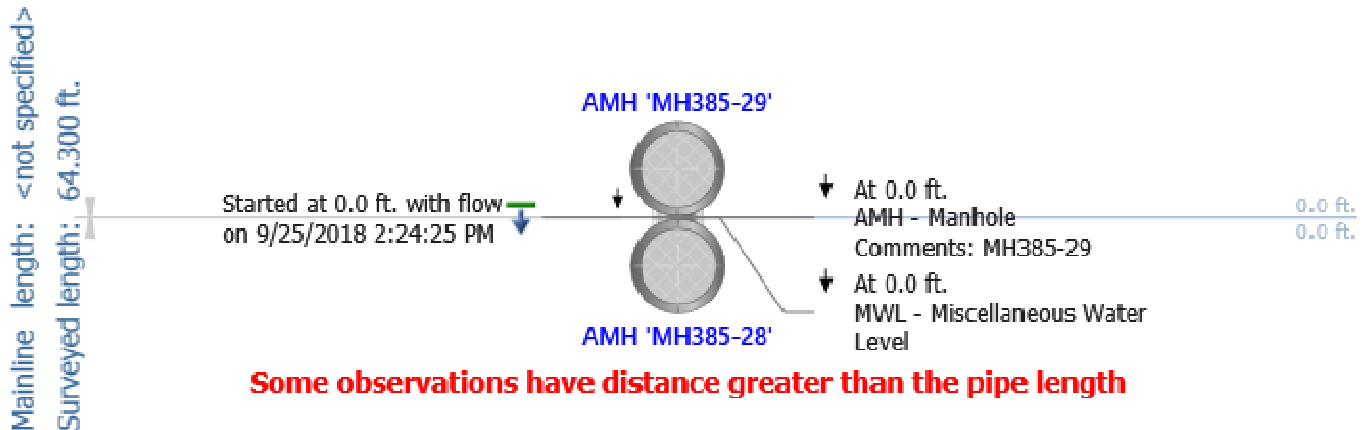


Notes: 577-44 to 577-43

- 30-in. CMP
- 336 LF
- 3-4" of debris, flow creating channel through debris
- Surface corrosion in bottom half of pipe
- Evidence of infiltration at joints, debris and discoloration/surface corrosion visible
- Unable to view invert due to flow/debris, invert probed, metal loss observed
- Discoloration in top of pipe
- Ovality in pipe, difficult to observe due to quality of survey, approximately 5-10% loss of cross sectional area in various sections of the pipe, 3 LF to 100 LF
- Hole, Approximately 6", soil visible, 2:00 position at 228 LF
- 1" deformation, 11:00 and 12:00 position, at 228 LF and 230 LF respectively
- Flow: 2-3"
- Grade score of: 4

Main Inspections Pipe Run

Project name:	Mainline ID:	City:	Street:
Debarr storm cctv project	MH385-29 - MH385-28	Anchorage	Debarr
Start date/time:	Direction:	Weather:	Location code:
9/25/2018 2:24 PM	D		
Shape:	Material:	Height:	Width:
C	CMP	18 in.	

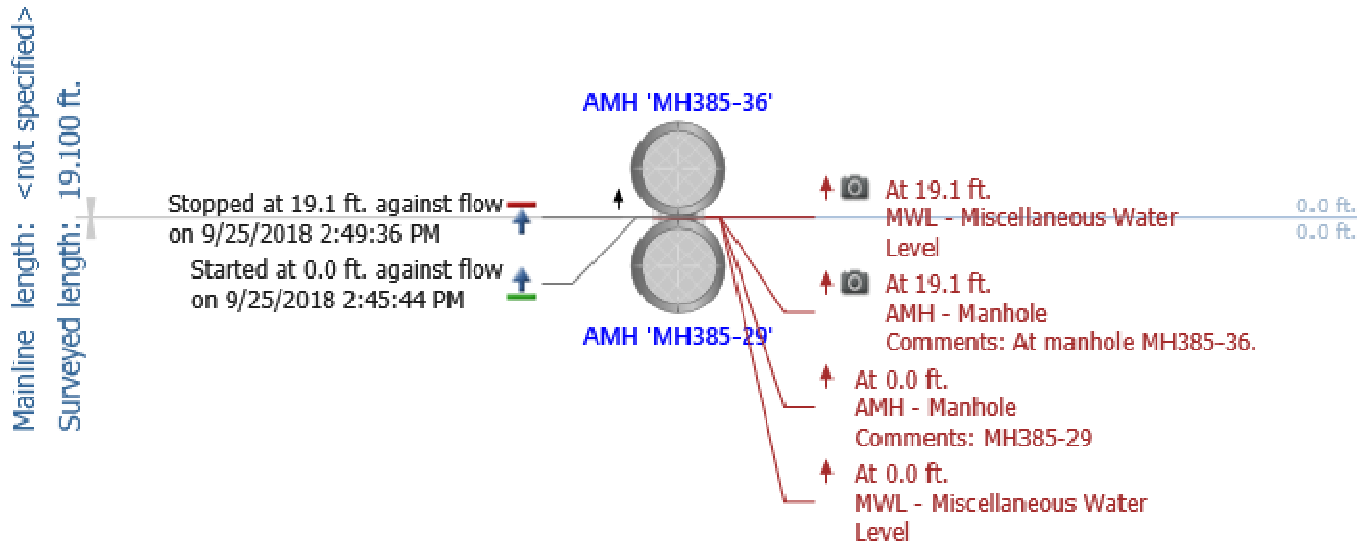


Notes: 385-29 to 385-28

- 18-in. CMP
- 276 LF
- Organic debris (leaves) in pipe
- 0-1" sediment, 3 LF to 64 LF, 2" debris buildup at 12 LF, pipe becomes approximately half full of debris at 64 LF, unable to continue survey
- Surface corrosion visible at 5:00 and 7:00 position throughout pipe
- Corrosion visible in invert when not obscured by debris
- Flow: 0-1"
- Grade score of: 3

Main Inspections Pipe Run

Project name:	Mainline ID:	City:	Street:
Debarr storm cctv project	385-36 to 385-29	Anchorage	Debarr
Start date/time:	Direction:	Weather:	Location code:
9/25/2018 2:45 PM	U		
Shape:	Material:	Height:	Width:
C	CMP	18 in.	

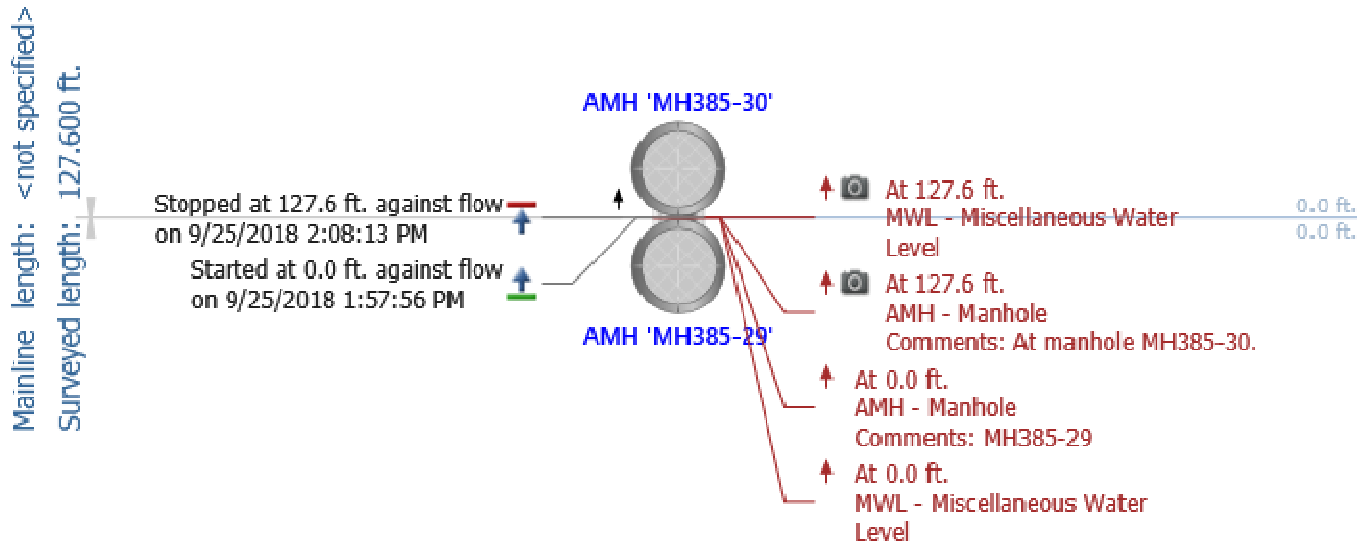


Notes: 385-36 to 385-29

- 18-in. CMP
- 19 LF
- Garbage/debris at downstream end
- Corrosion in invert throughout pipe
- Flow: None
- Grade score of: 2

Main Inspections Pipe Run

Project name:	Mainline ID:	City:	Street:
Debarr storm cctv project	385-30 to 385-29	Anchorage	Debarr
Start date/time:	Direction:	Weather:	Location code:
9/25/2018 1:57 PM	U		
Shape:	Material:	Height:	Width:
C	CMP	18 in.	

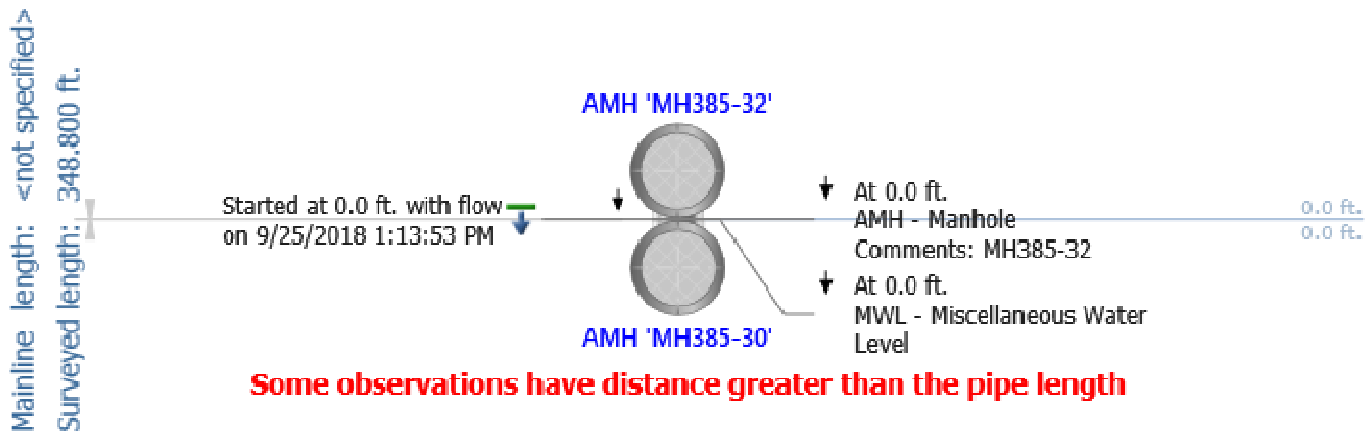


Notes: 385-30 to 385-29

- 18-in. CMP
- 128 LF
- 1-2" of debris in pipe
- Surface corrosion between 5:00 and 7:00 position
- Flow: Minimal
- Grade score of: 2

Main Inspections Pipe Run

Project name:	Mainline ID:	City:	Street:
Debarr storm cctv project	MH385-32 - MH385-30	Anchorage	Debarr
Start date/time:	Direction:	Weather:	Location code:
9/25/2018 1:13 PM	D		
Shape:	Material:	Height:	Width:
C	CMP	18 in.	

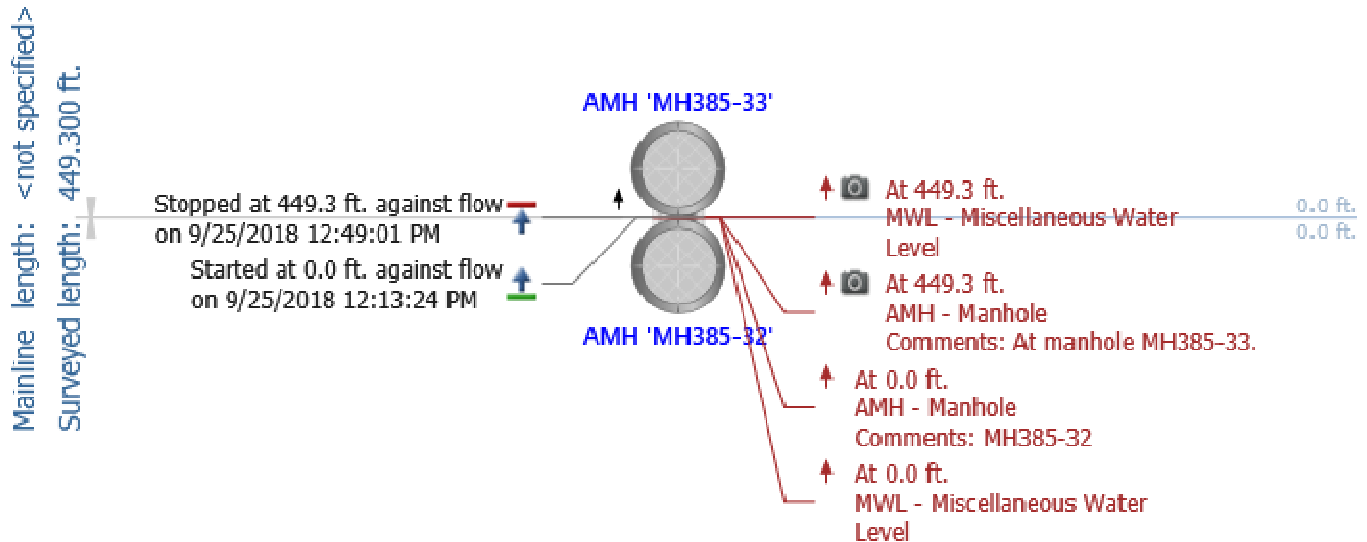


Notes: 385-32 to 385-30

- 18-in. CMP
- 349 LF
- Organic debris (leaves) in pipe
- 0-1" sediment
- Minor surface corrosion at pipe ends at joints
- Surface corrosion visible at 5:00 and 7:00 position throughout pipe
- Corrosion visible in invert when not obscured by debris
- Flow: Minimal
- Grade score of: 2

Main Inspections Pipe Run

Project name:	Mainline ID:	City:	Street:
Debarr storm cctv project	385-33 to 385-32	Anchorage	Debarr
Start date/time:	Direction:	Weather:	Location code:
9/25/2018 12:13 PM	U		
Shape:	Material:	Height:	Width:
C	CMP	18 in.	

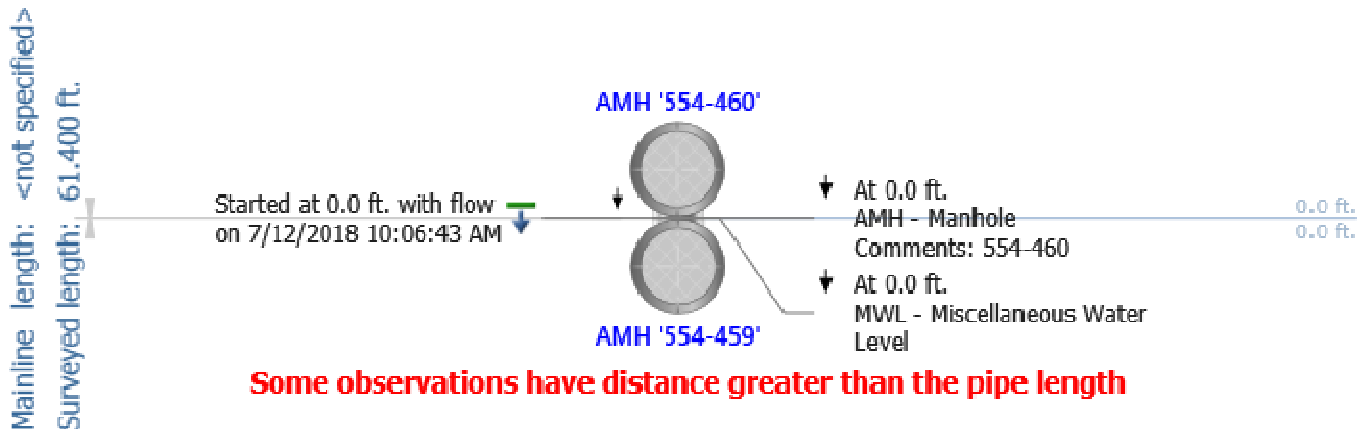


Notes: 385-33 to 385-32

- 18-in. CMP
- 449 LF
- Approximately 2" of debris at downstream end, 6" debris at upstream end
- Surface corrosion between 5:00 and 7:00 position, discoloration between 4:00 and 8:00 position
- Minor surface corrosion at pipe ends at joints
- 0-1" debris in pipe
- Discoloration in top of pipe, 364 LF
- Flow: Minimal
- Grade score of: 2

Main Inspections Pipe Run

Project name:	Mainline ID:	City:	Street:
Dimond Blvd. CCTV map 2018	554-460 - 554-459	Anchorage	Debarr
Start date/time:	Direction:	Weather:	Location code:
7/12/2018 10:06 AM	D		
Shape:	Material:	Height:	Width:
C	CMP	12 in.	

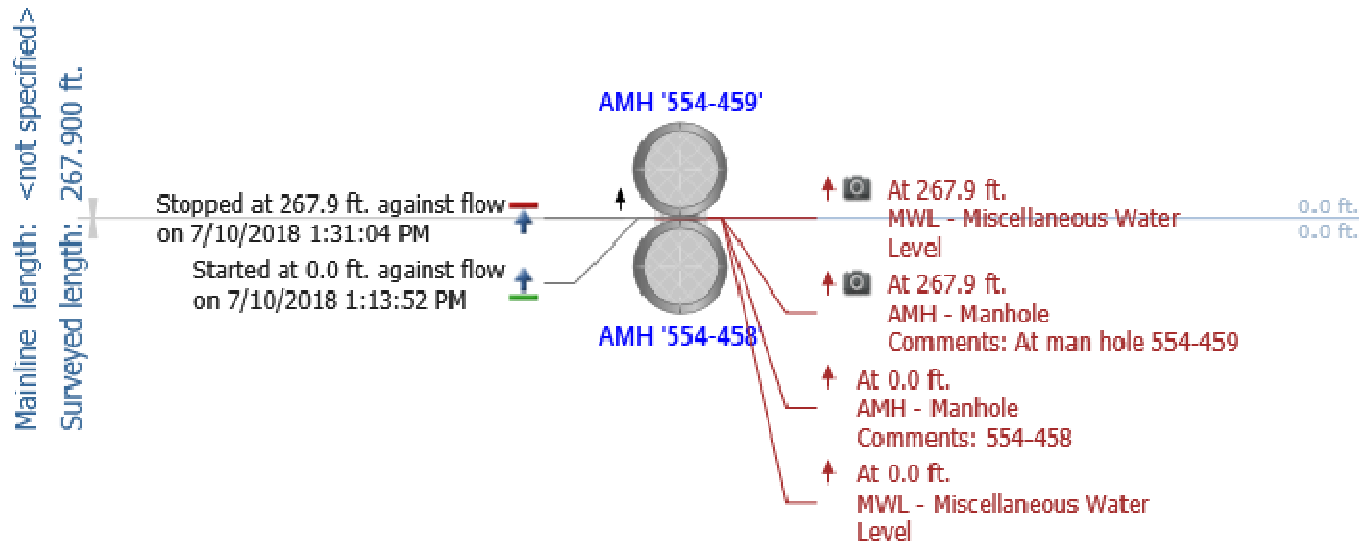


Notes: 554-460 to 554-459

- 12-in. CMP
- 61 LF
- Surface corrosion and discoloration visible in bottom half of pipe, 8 LF
- Surface corrosion at joint, 13 LF
- Corrosion visible in invert at joints
- 1-2" debris in pipe
- Flow: Minimal
- Grade score of: 2

Main Inspections Pipe Run

Project name: Debarr Road CCTV 2018	Mainline ID: 554-459 to 554-458	City: Anchorage	Street: Debarr
Start date/time: 7/10/2018 1:13 PM	Direction: U	Weather:	Location code:
Shape: C	Material: CMP	Height: 18 in.	Width:

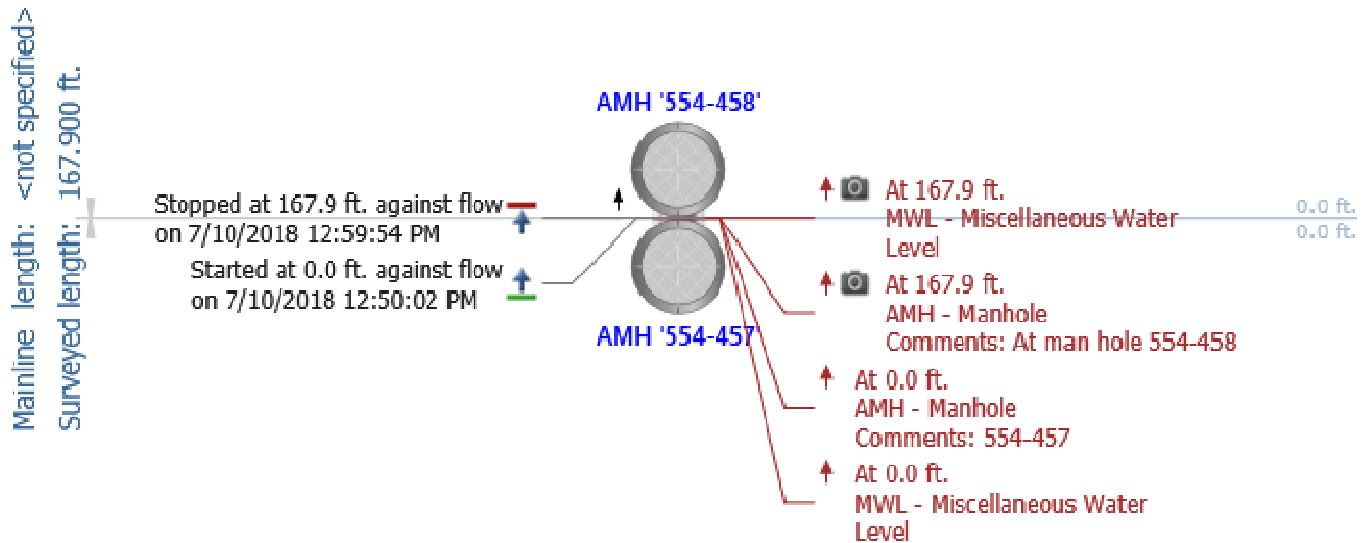


Notes: 554-459 to 554-458

- 18-in. CMP
- 268 LF
- Discoloration in bottom half of pipe throughout pipe
- Minimal debris
- Corrosion in invert, visible at joints
- 1-2" deformation, 11:00 position, 77 LF
- 1" deformation, 11:00 position, 93 LF, 154 LF
- 0-1" debris, varies between 162 LF to end of survey
- Flow: Minimal
- Grade score of: 2

Main Inspections Pipe Run

Project name: Debarr Road CCTV 2018	Mainline ID: 554-458 to 554-457	City: Anchorage	Street: Debarr
Start date/time: 7/10/2018 12:50 PM	Direction: U	Weather:	Location code:
Shape: C	Material: CMP	Height: 18 in.	Width:

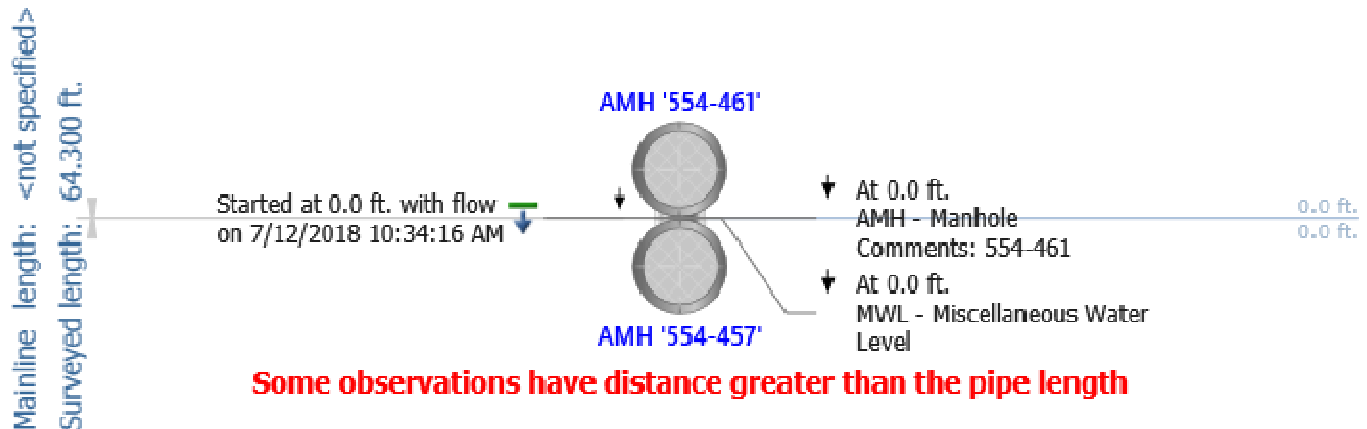


Notes: 554-458 to 554-457

- 18-in. CMP
- 168 LF
- 1-2" of debris downstream end to approximately 20 LF. Debris becomes minimal from 20 LF to end of pipe
- Discoloration in 4:00 and 8:00 position throughout pipe
- Surface corrosion at top of pipe at joint, 20 LF
- Surface corrosion visible in invert at joints (40 LF, 60 LF, 140 LF)
- 1-2" deformation in 12:00 position, approximately 48 LF
- No major structural defects observed
- Flow: Minimal
- Grade score of: 2

Main Inspections Pipe Run

Project name:	Mainline ID:	City:	Street:
Dimond Blvd. CCTV map 2018	554-461 - 554-457	Anchorage	Debarr
Start date/time:	Direction:	Weather:	Location code:
7/12/2018 10:34 AM	D		
Shape:	Material:	Height:	Width:
C	CMP	12 in.	

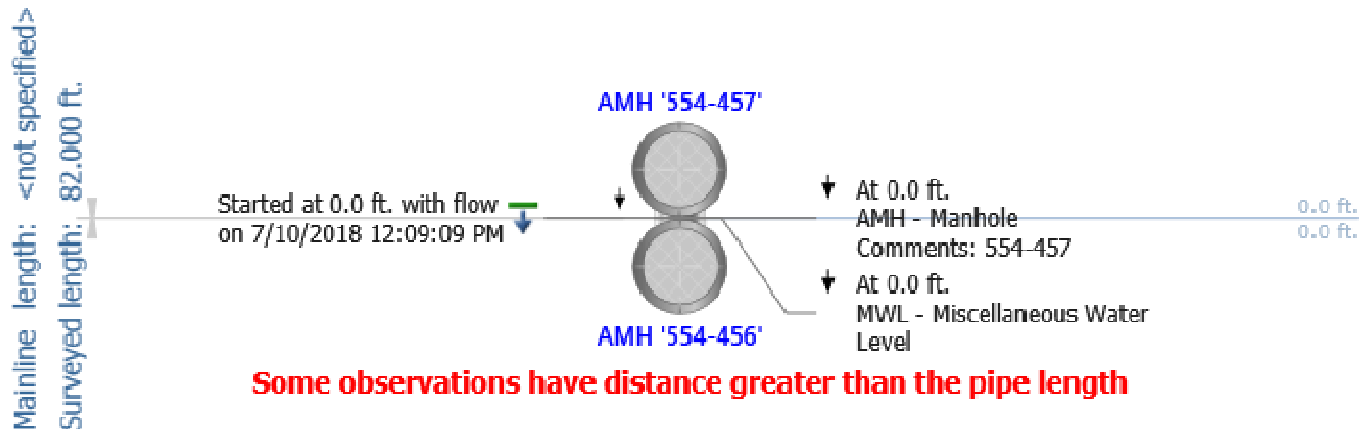


Notes: 554-461 to 554-457

- 12-in. CMP
- 64 LF
- 1-2" of debris
- Surface corrosion visible in 4:00 and 8:00 position, 6 LF to approximately 40 LF, surface corrosion/discoloration at water line
- Surface corrosion at joint (19 LF, 39 LF)
- Invert obscured by debris
- Flow: Minimal
- Grade score of: 2

Main Inspections Pipe Run

Project name:	Mainline ID:	City:	Street:
Debarr Road CCTV 2018	554-457 to 554-456	Anchorage	Debarr
Start date/time:	Direction:	Weather:	Location code:
7/10/2018 12:09 PM	D		
Shape:	Material:	Height:	Width:
C	CMP	18 in.	

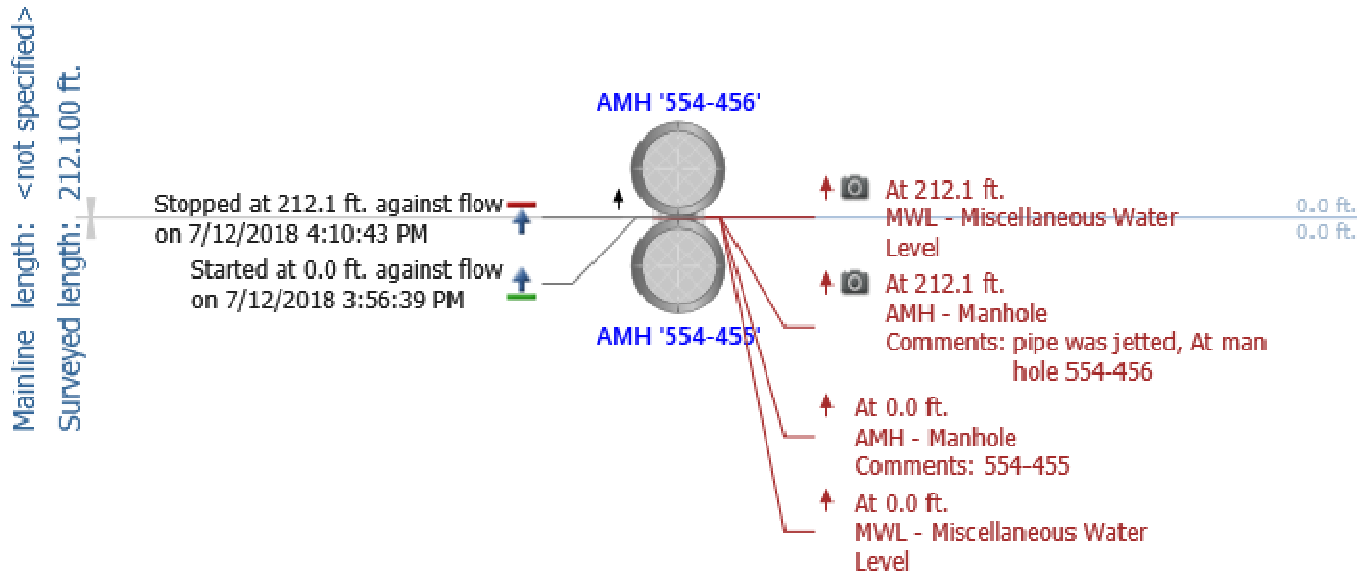


Notes: 554-457 to 554-456

- 18-in. CMP
- 82 LF
- 1-2" of debris in pipe throughout pipe, unable to see invert
- Discoloration in 3:00 and 9:00 position
- Corrosion at joint, 12:00 position (76 LF)
- 1-2" deformation, 12:00 position, downstream end
- No major structural defects observed
- Flow: 1-2"
- Grade score of: 2

Main Inspections Pipe Run

Project name:	Mainline ID:	City:	Street:
Debarr storm cctv project	554-456 to 554-455	Anchorage	Debarr
Start date/time:	Direction:	Weather:	Location code:
7/12/2018 3:56 PM	U		
Shape:	Material:	Height:	Width:
C	CMP	18 in.	

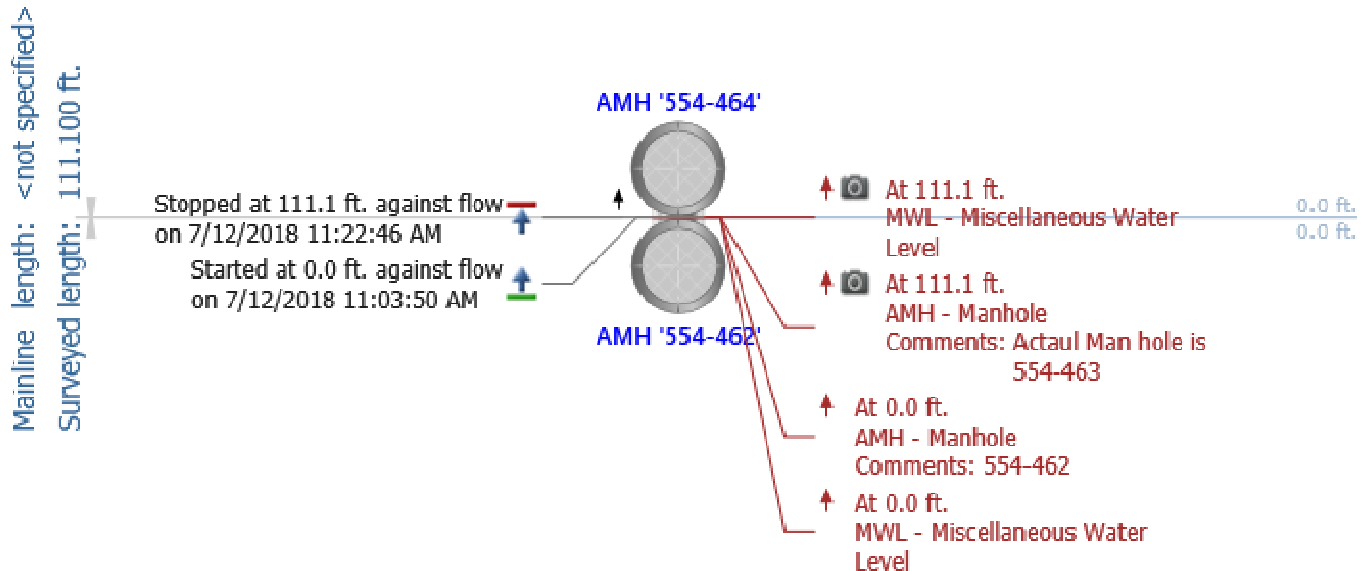


Notes: 554-456 to 554-455

- 18-in. CMP
- 212 LF
- 0-1" deformation, 12:00 position at 13 LF
- Surface discoloration/corrosion visible at joints at water line, discoloration in bottom half of pipe, discoloration/surface corrosion visible in invert (161 LF)
- Corrosion spot, 22 LF in 10:00 position
- 0-1" deformation, 10:00 position, 24 LF
- 1-2" of debris, 30 LF to 90 LF, 0-1" 90 LF to
- Pinhole at 80 LF, 7:00 position
- 0-1" deformation, 11:00 position, 90 LF
- 0-1" deformation, 12:00 position, 115 LF
- Corrosion hole, 118 LF, 1:00 position
- Corrosion hole, 136 LF, 1:00 position
- 2 1" deformations, approximately 190 LF, 11:00 position
- Flow: 0-2"
- Grade score of: 2

Main Inspections Pipe Run

Project name:	Mainline ID:	City:	Street:
Debarr storm cctv project	554-463 to 554-462	Anchorage	Debarr
Start date/time:	Direction:	Weather:	Location code:
7/12/2018 11:03 AM	U		
Shape:	Material:	Height:	Width:
C	CMP	12 in.	

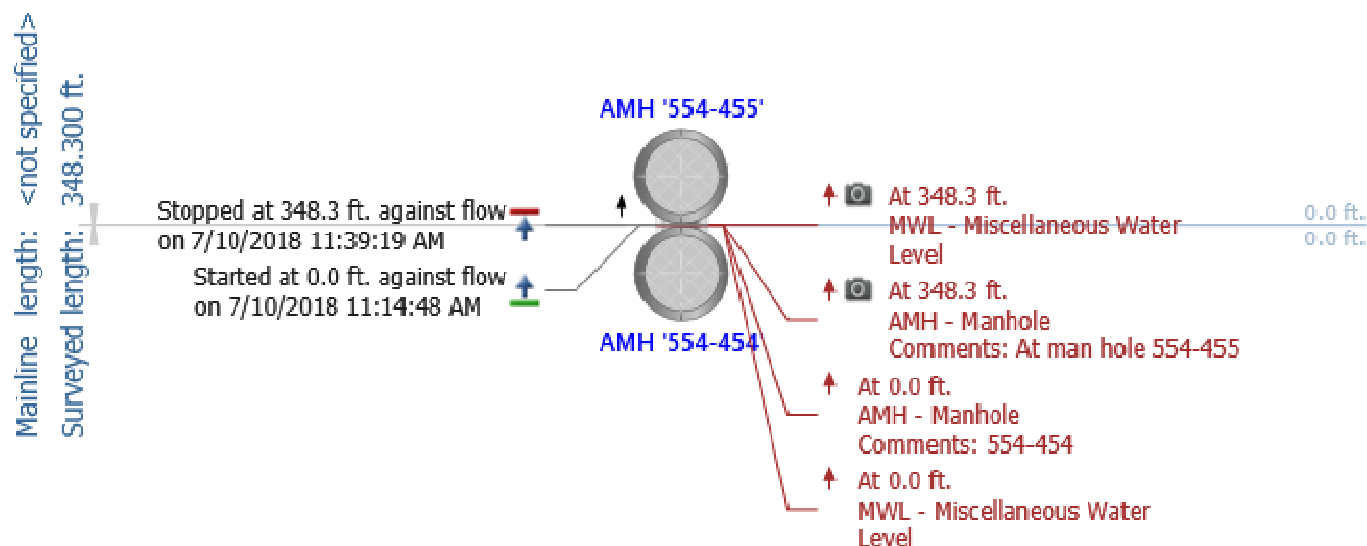


Notes: 554-463 to 554-462

- 12-in. CMP
- 111 LF
- Discoloration throughout pipe
- Surface corrosion visible at flow line, approximately 10 LF
- Debris in top of pipe
- Deformation/ broken pipe at 34 LF, 12:00 position, appears to be repair band
- Corrosion spot, 45 LF, 1:00 position
- Horizontal deflection to left, 60 LF, flow decreases to about 1" after bend
- Horizontal deflection to left, 84 LF
- Surface corrosion visible in invert, 108 LF
- Flow: 1-3"
- Grade score of: 2

Main Inspections Pipe Run

Project name: Debarr Road CCTV 2018	Mainline ID: 554-455 to 554-454	City: Anchorage	Street: Debarr
Start date/time: 7/10/2018 11:14 AM	Direction: U	Weather:	Location code:
Shape: C	Material: CMP	Height: 18 in.	Width:

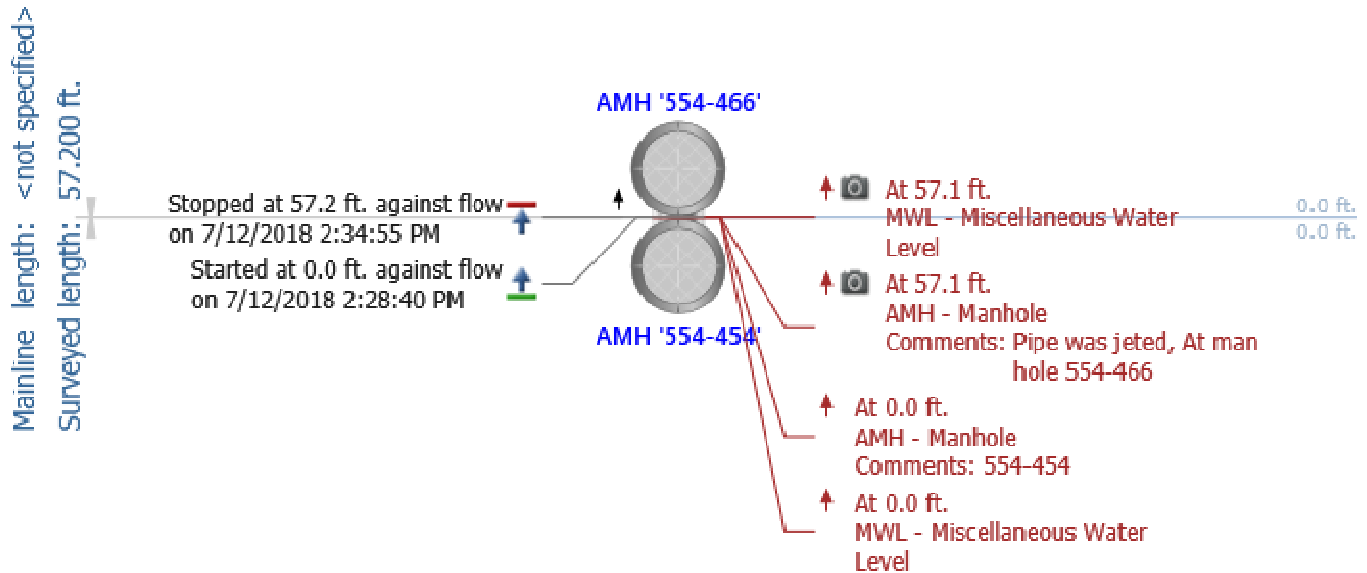


Notes: 554-455 to 554-454

- 18-in. CMP
- 348 LF
- 2-3" of debris throughout pipe, gradually increases upstream
- 0-1" deformation, 1:00 position at 9 LF
- Invert obscured by water and debris throughout pipe, unable to determine invert condition
- Flow increases gradually upstream
- Flow: 2-3"
- Grade score of: 2

Main Inspections Pipe Run

Project name:	Mainline ID:	City:	Street:
Debarr storm cctv project	554-466 to 554-454	Anchorage	Debarr
Start date/time:	Direction:	Weather:	Location code:
7/12/2018 2:28 PM	U		
Shape:	Material:	Height:	Width:
C	CPEP	12 in.	

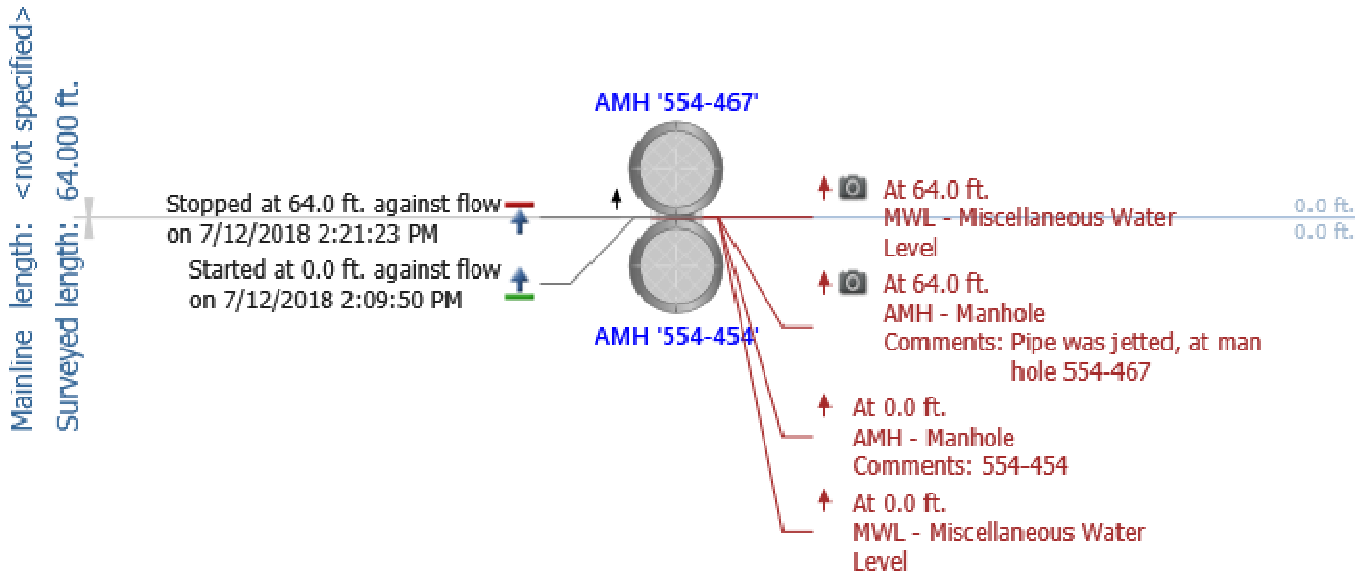


Notes: 554-466 to 554-454

- 12-in. CPEP
- 57 LF
- Pipe cleaned, no debris or flow
- No major structural defects observed
- Flow: None
- Grade score of: 1

Main Inspections Pipe Run

Project name:	Mainline ID:	City:	Street:
Debarr storm cctv project	554-467 to 554-454	Anchorage	Debarr
Start date/time:	Direction:	Weather:	Location code:
7/12/2018 2:09 PM	U		
Shape:	Material:	Height:	Width:
C	CMP	12 in.	

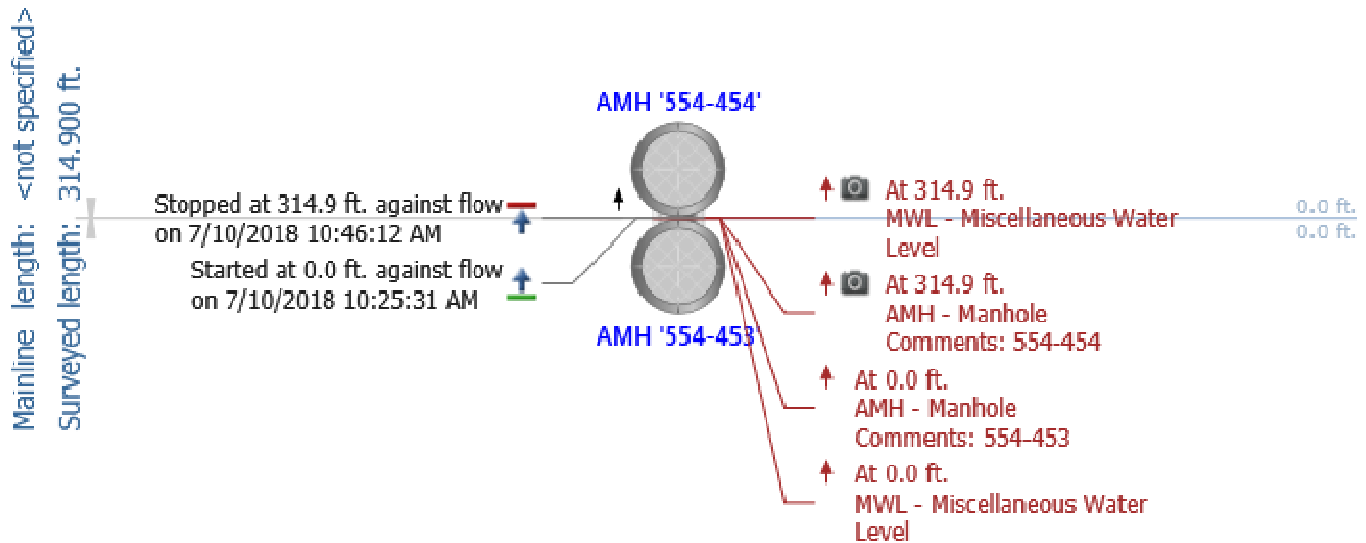


Notes: 554-467 to 554-454

- 12-in. CMP
- 64 LF
- Discoloration in bottom half of pipe
- Surface corrosion in invert, 4:00 and 8:00 position throughout pipe
- Minimal debris in pipe
- Surface corrosion at joints
- Flow: None
- Grade score of: 2

Main Inspections Pipe Run

Project name: Debarr Road CCTV 2018	Mainline ID: 554-454 to 554-453	City: Anchorage	Street: Debarr
Start date/time: 7/10/2018 10:25 AM	Direction: U	Weather:	Location code:
Shape: C	Material: CMP	Height: 18 in.	Width:

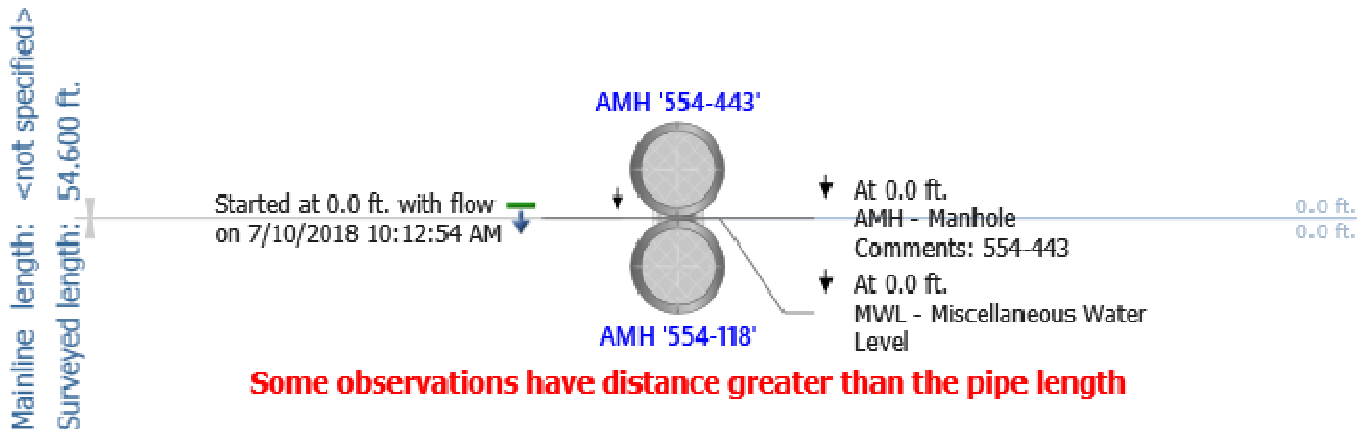


Notes: 554-454 to 554-453

- 18-in. CMP
- 315 LF
- Surface corrosion visible in invert at joints, also visible at water line when invert obscured by debris
- Minimal debris in pipe, less than 1 inch, increases to about 1-2" until 280 LF, returns to 0-1"
- Discoloration in 4:00 and 8:00 position
- Debris in top of pipe
- No major structural defects observed
- Flow: 1-2"
- Grade score of: 2

Main Inspections Pipe Run

Project name:	Mainline ID:	City:	Street:
Debarr Road CCTV 2018	554-453 to 554-118	Anchorage	Debarr
Start date/time:	Direction:	Weather:	Location code:
7/10/2018 10:12 AM	D		
Shape:	Material:	Height:	Width:
C	CMP	18 in.	

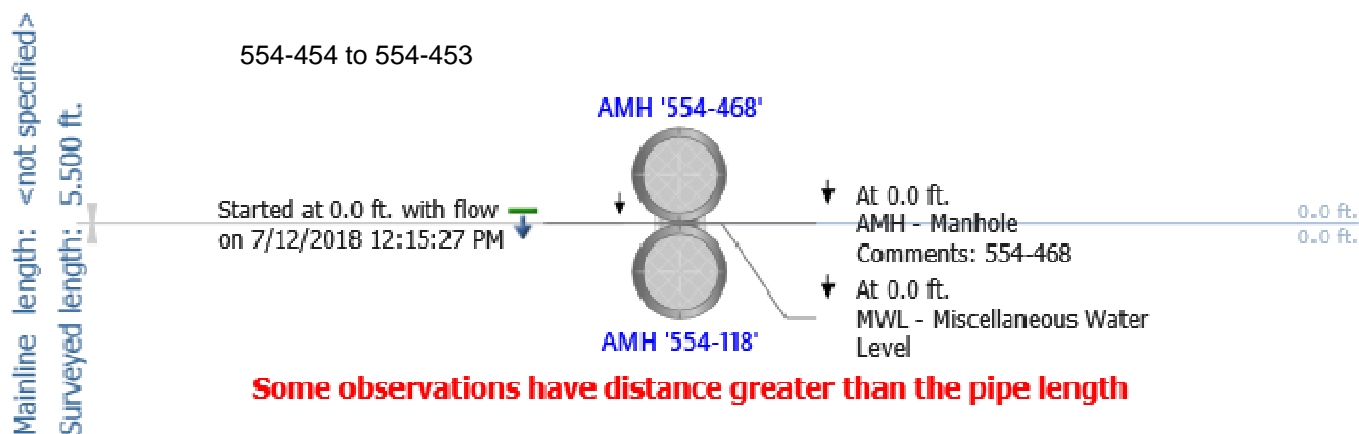


Notes: 554-453 to 554-118

- 18-in. CMP
- 55 LF
- Discoloration/surface corrosion visible in invert (24 LF, 44 LF)
- Dirt/debris in top of pipe
- 0-1" debris throughout pipe, 1-2" at downstream end
- No major defects observed
- Flow: 0-1"
- Grade score of: 2

Main Inspections Pipe Run

Project name:	Mainline ID:	City:	Street:
Debarr storm cctv project	554-468 - 554-118	Anchorage	Debarr
Start date/time:	Direction:	Weather:	Location code:
7/12/2018 12:15 PM	D		
Shape:	Material:	Height:	Width:
C	CMP	12 in.	

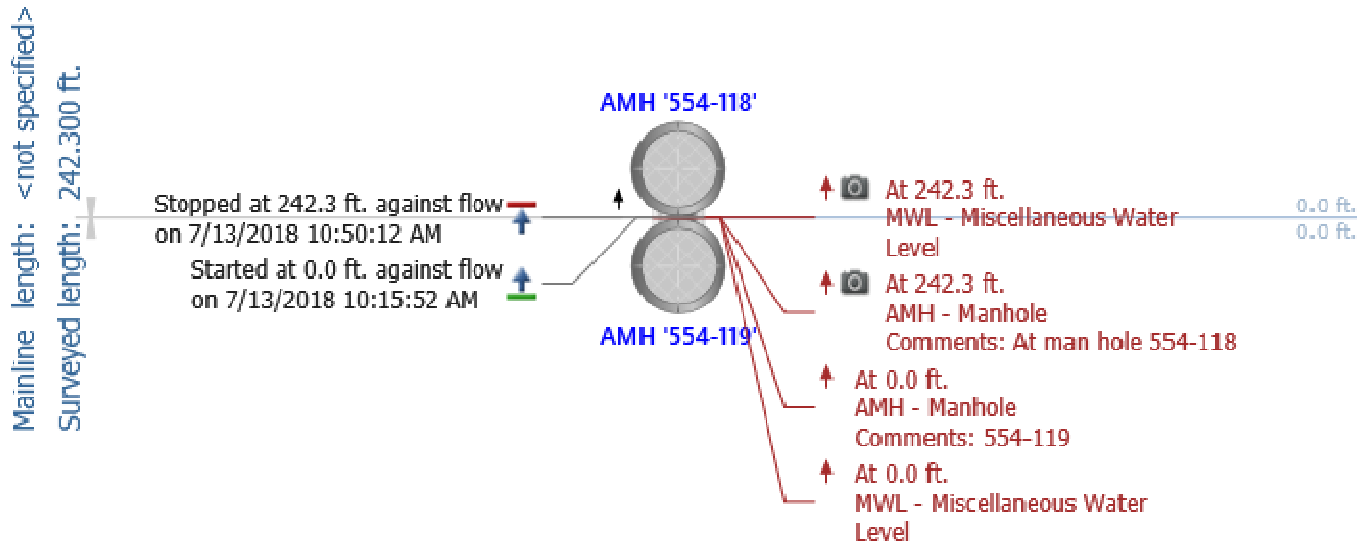


Notes: 554-468 to 554-118

- 12-in. CMP
- 6 LF
- No defects observed
- Flow: None
- Grade score of: 1

Main Inspections Pipe Run

Project name:	Mainline ID:	City:	Street:
Debarr storm cctv project	554-119- 554-118	Anchorage	Debarr
Start date/time:	Direction:	Weather:	Location code:
7/13/2018 10:15 AM	U		
Shape:	Material:	Height:	Width:
C	CMP	36 in.	

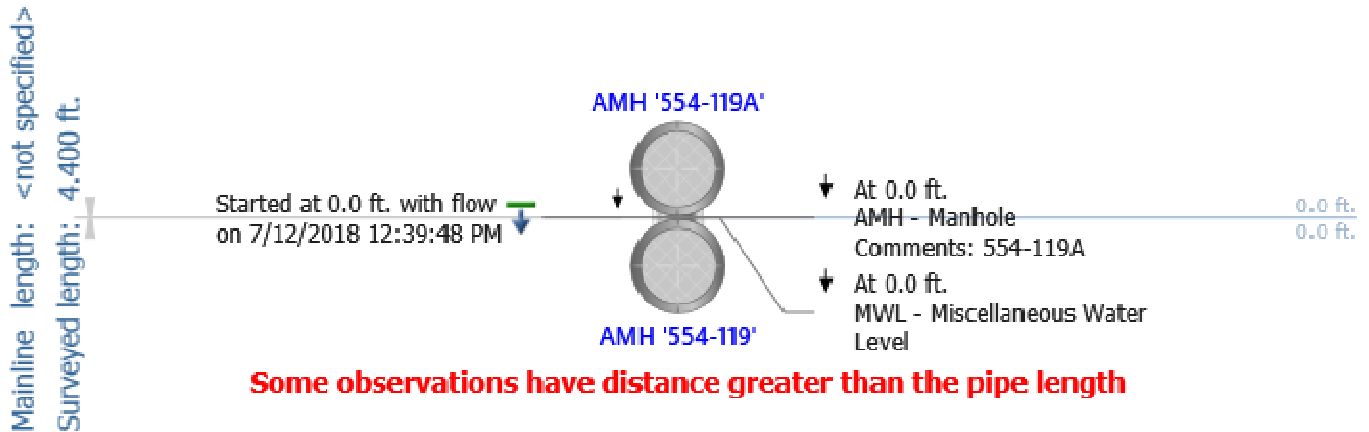


Notes: 554-119 to 554-118

- 36-in. CMP
- 242 LF
- Mild corrosion at flow line, visible at joints
- Debris at joints, debris above flow line assumed to be from infiltration
- Invert obscured by flow, unable to determine condition
- No major structural defects observed
- Flow: 2-3"
- Grade score of: 2

Main Inspections Pipe Run

Project name:	Mainline ID:	City:	Street:
Debarr storm cctv project	554-452 to 554-119	Anchorage	Debarr
Start date/time:	Direction:	Weather:	Location code:
7/12/2018 12:39 PM	D		
Shape:	Material:	Height:	Width:
C	CMP	12 in.	

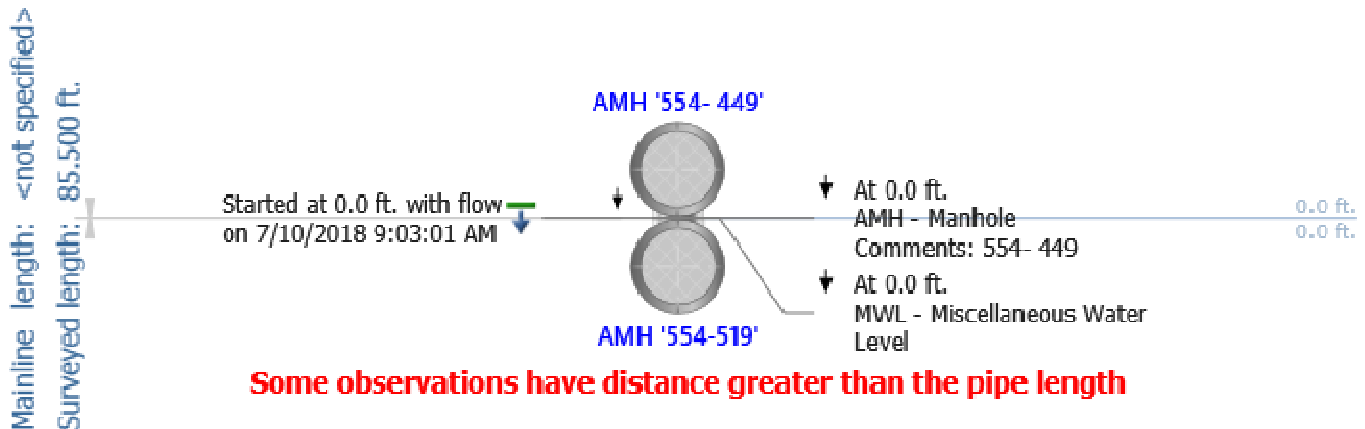


Notes: 554-452 to 554-119

- 12-in. CMP
- 4 LF
- No major defects observed
- Flow: None
- Grade score of: 1

Main Inspections Pipe Run

Project name:	Mainline ID:	City:	Street:
Debarr Road CCTV 2018	554-449 to 554-119	Anchorage	Debarr
Start date/time:	Direction:	Weather:	Location code:
7/10/2018 9:03 AM	D		
Shape:	Material:	Height:	Width:
C	CMP	24 in.	



Notes: 554-449 to 554-119

- 24-in. CMP
- 86 LF
- 1-2" of debris, upstream end to 40 LF, 0-1" from 40 LF to end
- Minor surface corrosion at joint (20 LF) in invert at 80 LF and downstream end
- Deformed metal at joint, 20 LF, 11:00 position
- Dirt/debris/discoloration visible in top of pipe
- No major structural defects observed
- Flow: Minimal
- Grade score of: 2



CUES, Inc.
3600 Rio Vista Avenue
Orlando, FL 32805
Phone: 407-849-0190
Fax: 407-425-1569

Main Inspections Pipe Run

Project name:	Mainline ID:	City:	Street:
Debarr storm cctv project	MH 554-450 to 554-449	Anchorage	Debarr
Start date/time:	Direction:	Weather:	Location code:
9/6/2018 10:31 AM	D		
Shape:	Material:	Height:	Width:
C	CMP	12 in.	

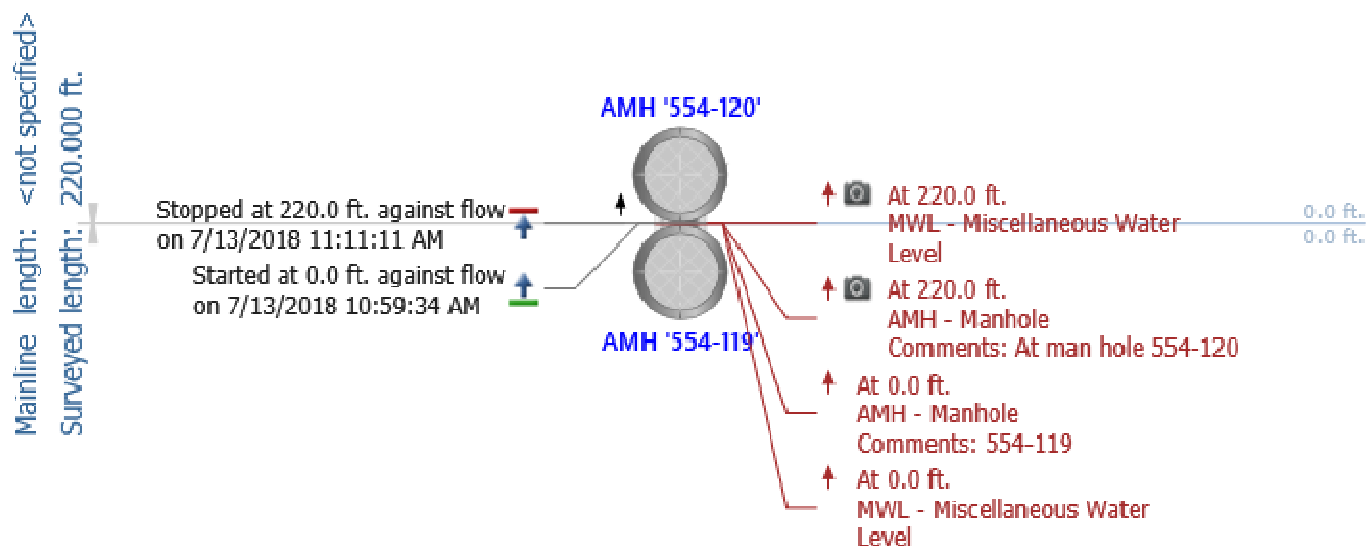
Mainline length: <not specified>
Surveyed length: 20.6 ft.

Notes: 554-450 to 554-449

- 12-in. CMP
- 165 LF
- 3-4" of debris in pipe
- Surface discoloration and corrosion at 4:00 and 8:00 position
- Unable to continue survey due to debris, 21 LF
- Corrosion likely in invert, unable to confirm due to debris
- Flow: None
- Grade score of: 2

Main Inspections Pipe Run

Project name:	Mainline ID:	City:	Street:
Debarr storm cctv project	MH 554-120 to 554-119	Anchorage	Debarr
Start date/time:	Direction:	Weather:	Location code:
7/13/2018 10:59 AM	U		
Shape:	Material:	Height:	Width:
C	CMP	36 in.	

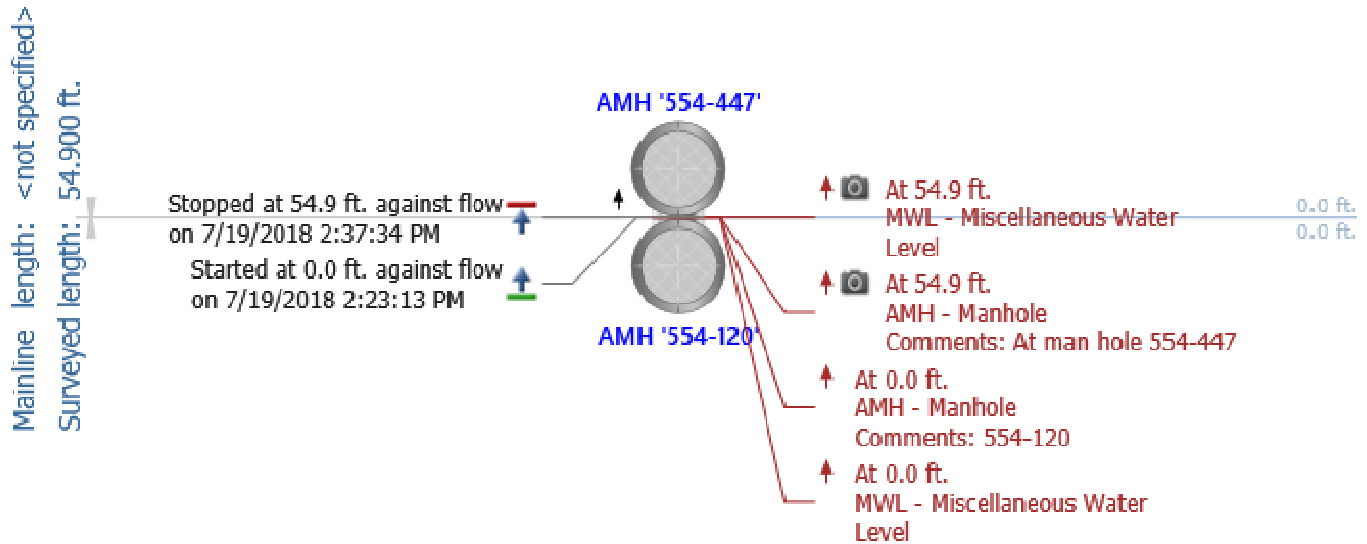


Notes: 554-120 to 554-119

- 36-in. CMP
- 220 LF
- Surface corrosion visible at flow line and invert at joints
- Minimal debris at joints, assuming debris above flow line from infiltration
- No major structural defects, invert condition does not warrant repair at time of inspection
- Flow: 3-4"
- Grade score of: 2

Main Inspections Pipe Run

Project name:	Mainline ID:	City:	Street:
Debarr storm cctv project	554-447 to 554-120	Anchorage	Debarr
Start date/time:	Direction:	Weather:	Location code:
7/19/2018 2:23 PM	U		
Shape:	Material:	Height:	Width:
C	CMP	12 in.	

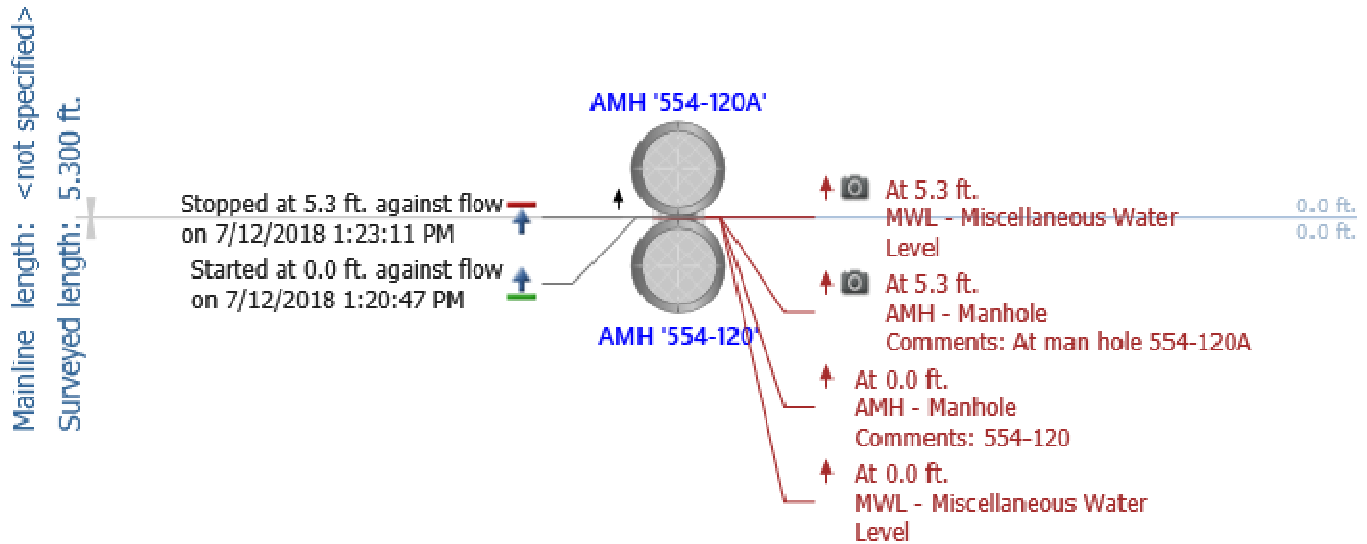


Notes: 554-447 to 554-120

- 12-in. CMP
- 55 LF
- Pipe cleaned to perform inspection
- Discoloration between 4:00 and 8:00 position
- Minor surface corrosion at pipe ends at joints
- Corrosion visible in invert, 3 LF to end of pipe
- Flow: None
- Grade score of: 3

Main Inspections Pipe Run

Project name:	Mainline ID:	City:	Street:
Debarr storm cctv project	554-448 to 554-120	Anchorage	Debarr
Start date/time:	Direction:	Weather:	Location code:
7/12/2018 1:20 PM	U		
Shape:	Material:	Height:	Width:
C	CMP	12 in.	

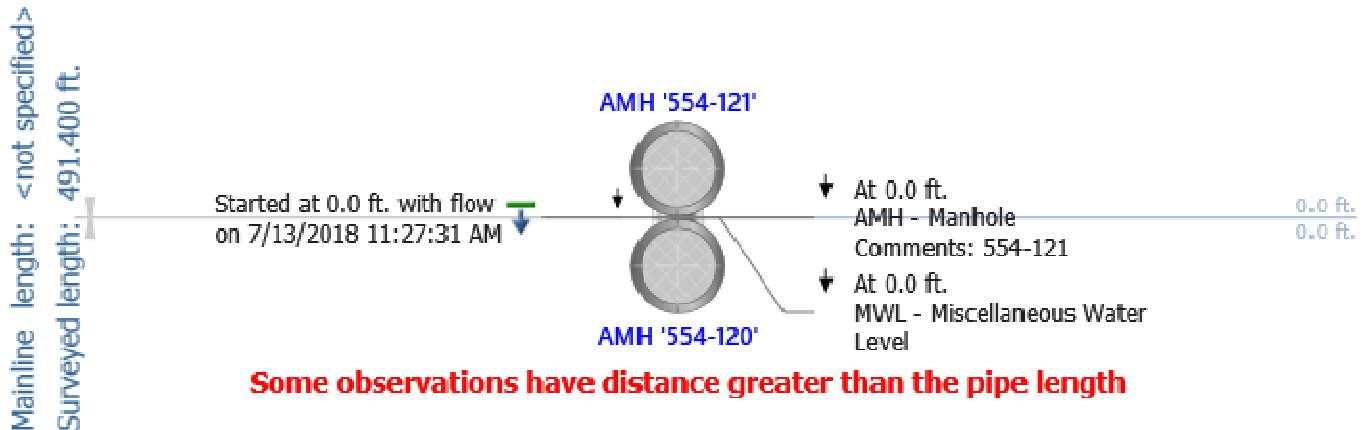


Notes: 554-448 to 554-120

- 12-in. CMP
- 5 LF
- Corrosion at joint
- 3-4" of debris
- Flow: None
- Grade score of: 1

Main Inspections Pipe Run

Project name:	Mainline ID:	City:	Street:
Debarr storm cctv project	554-121 - 554-120	Anchorage	Debarr
Start date/time:	Direction:	Weather:	Location code:
7/13/2018 11:27 AM	D		
Shape:	Material:	Height:	Width:
C	CMP	36 in.	

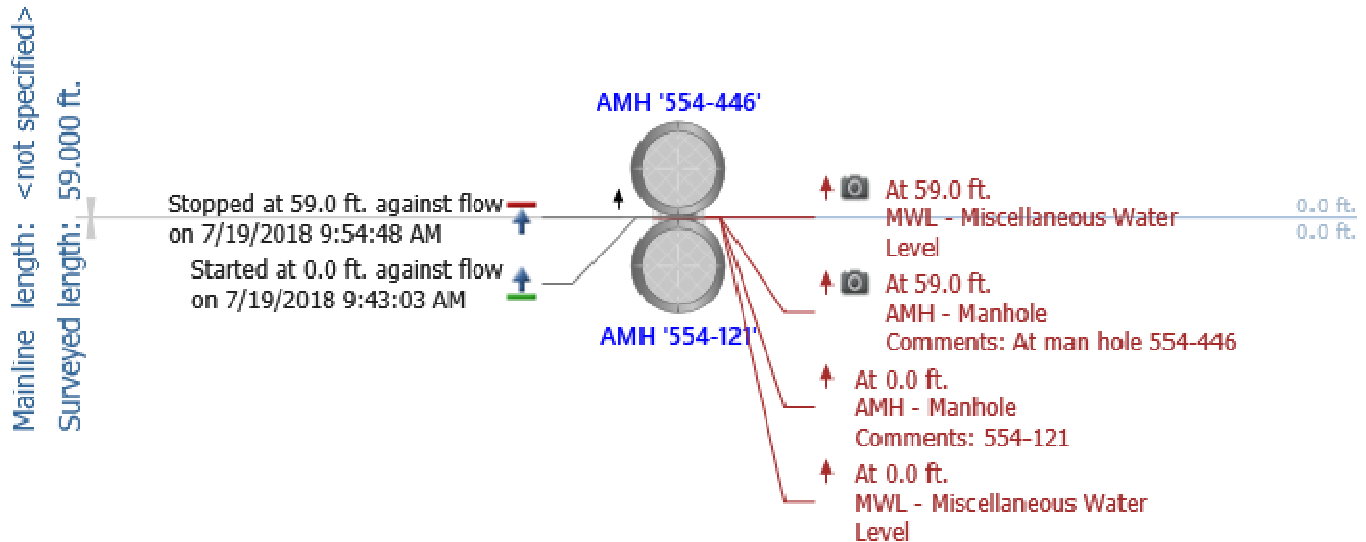


Notes: 554-121 to 554-120

- 36-in. CMP
- 491 LF
- Appears to be corrosion in invert, turbulent flow makes it difficult to observe invert condition
- Discoloration in pipe, 4:00 position to 8:00 position, appears to be surface corrosion at flow line, typical of mainline pipes
- Debris at joints, debris above flow line assumed to be from infiltration
- Joint infiltration, 4:00 position at 330 LF
- Crushed pipe, 9:00 to 12:00 position, 6-8", two holes with soil visible at 386 LF
- Flow: 2-3"
- Grade score of: 3

Main Inspections Pipe Run

Project name:	Mainline ID:	City:	Street:
Debarr storm cctv project	554-446 to 554-121	Anchorage	Debarr
Start date/time:	Direction:	Weather:	Location code:
7/19/2018 9:43 AM	U		
Shape:	Material:	Height:	Width:
C	CMP	12 in.	

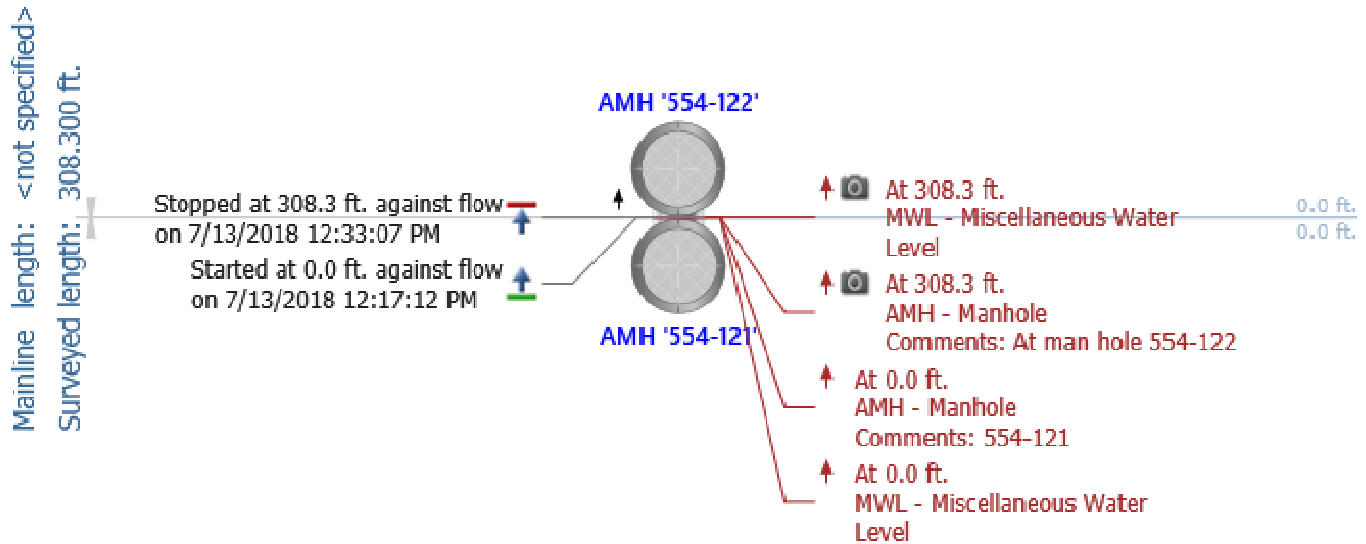


Notes: 554-446 to 554-121

- 12-in. CMP
- 59 LF
- Debris buildup at downstream end, 3-4"
- 1:00-2:00 position, surface corrosion, 6 LF to 16 LF
- Minor surface corrosion visible in invert, 16 LF to
- 2 1-inch holes in pipe, 12:00 position 20 LF, minimal deformation
- Flow: Minimal
- Grade score of: 2

Main Inspections Pipe Run

Project name:	Mainline ID:	City:	Street:
Debarr storm cctv project	554-122 to 554-121	Anchorage	Debarr
Start date/time:	Direction:	Weather:	Location code:
7/13/2018 12:17 PM	U		
Shape:	Material:	Height:	Width:
C	CMP	36 in.	

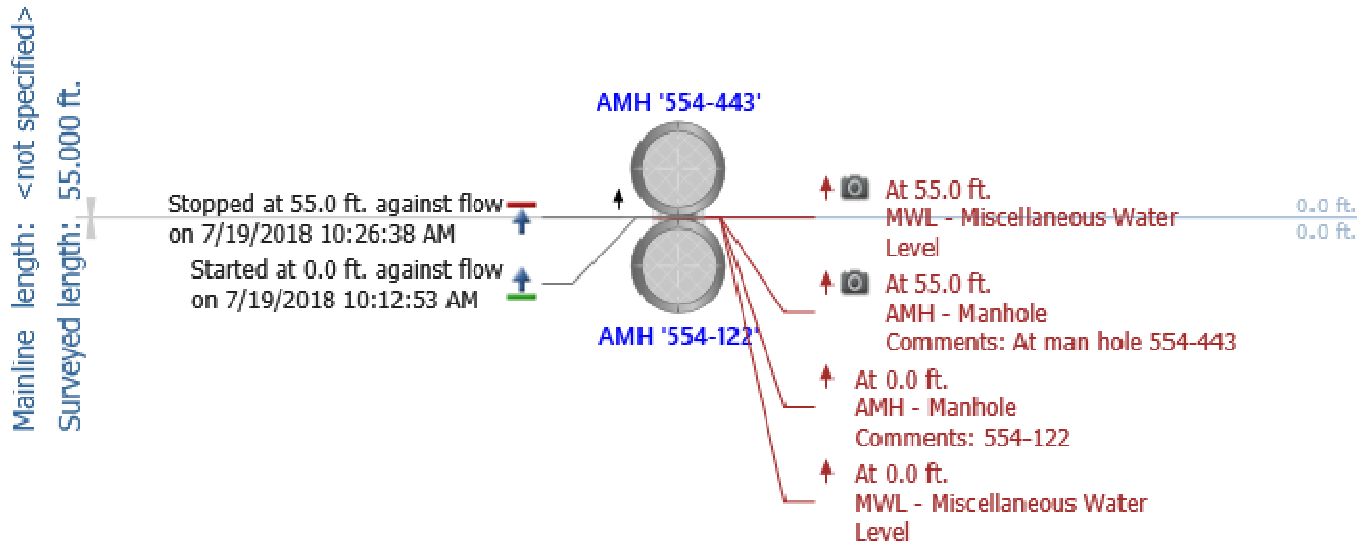


Notes: 554-122 to 554-121

- 36-in. CMP
- 308 LF
- Corrosion visible at flow line at joints
- Corrosion visible in invert at joints
- Minor debris in joints throughout pipe
- No major structural defects, corrosion does not warrant repair at this time
- Flow: 3-4"
- Grade score of: 2

Main Inspections Pipe Run

Project name:	Mainline ID:	City:	Street:
Debarr storm cctv project	554-443 to 554-122	Anchorage	Debarr
Start date/time:	Direction:	Weather:	Location code:
7/19/2018 10:12 AM	U		
Shape:	Material:	Height:	Width:
C	CMP	12 in.	

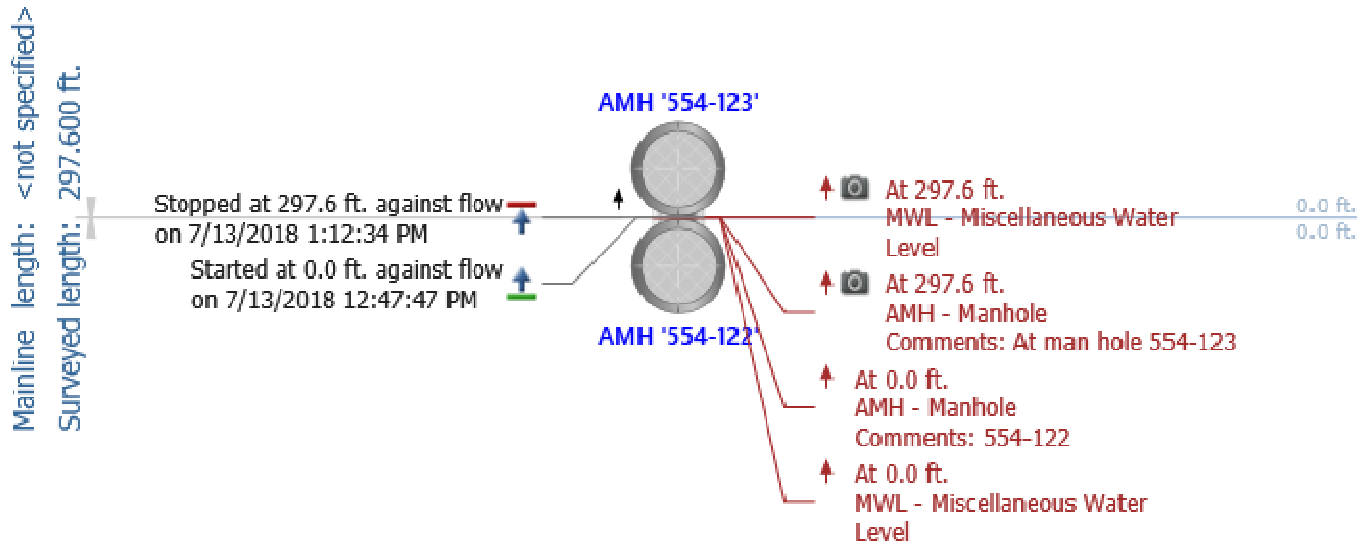


Notes: 554-443 to 554-122

- 12-in. CMP
- 55 LF
- 2-3" debris, 3 LF to 15 LF, possible belly in pipe
- 0-1" debris at joint, 30 LF
- Horizontal bend to left at 6 LF
- 1" deformation, 11:00 position at 15 LF
- Minor surface corrosion visible in invert, 50 LF
- Surface corrosion 3:00 position, 54 LF
- Flow: Minimal
- Grade score of: 2

Main Inspections Pipe Run

Project name:	Mainline ID:	City:	Street:
Debarr storm cctv project	554-123 to 554-122	Anchorage	Debarr
Start date/time:	Direction:	Weather:	Location code:
7/13/2018 12:47 PM	U		
Shape:	Material:	Height:	Width:
C	CMP	36 in.	

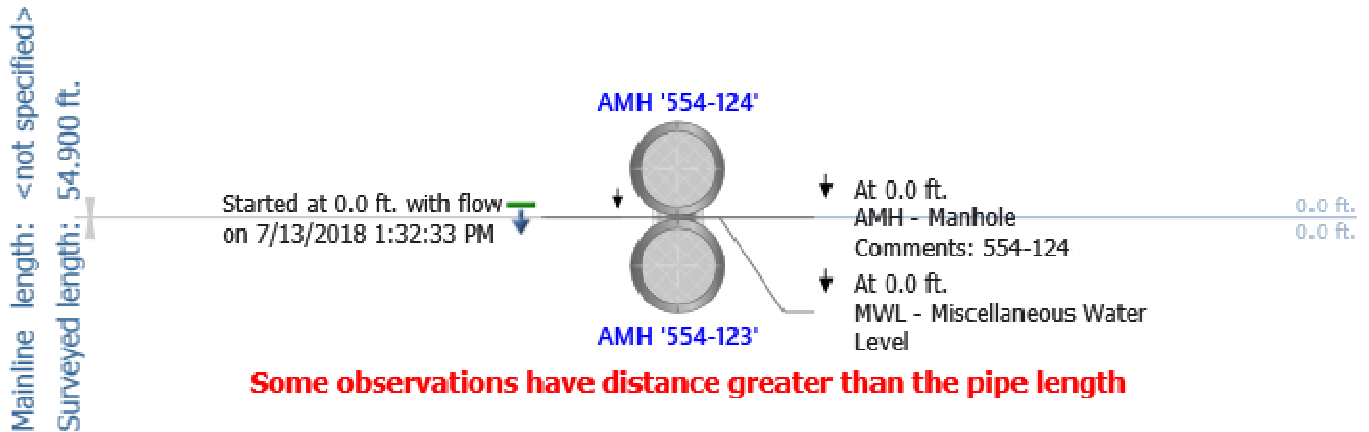


Notes: 554-123 to 554-122

- 36-in. CMP
- 298 LF
- Minor corrosion visible at flow line at joints
- Corrosion visible through flow in invert
- Minor debris at joints, buildup in 12:00 position at 195 LF, 215 LF
- No major structural defects, invert condition does not warrant repair at this time
- Flow: 3-4"
- Grade score of: 2

Main Inspections Pipe Run

Project name:	Mainline ID:	City:	Street:
Debarr storm cctv project	554-124 - 554-123	Anchorage	Debarr
Start date/time:	Direction:	Weather:	Location code:
7/13/2018 1:32 PM	D		
Shape:	Material:	Height:	Width:
C	CMP	36 in.	

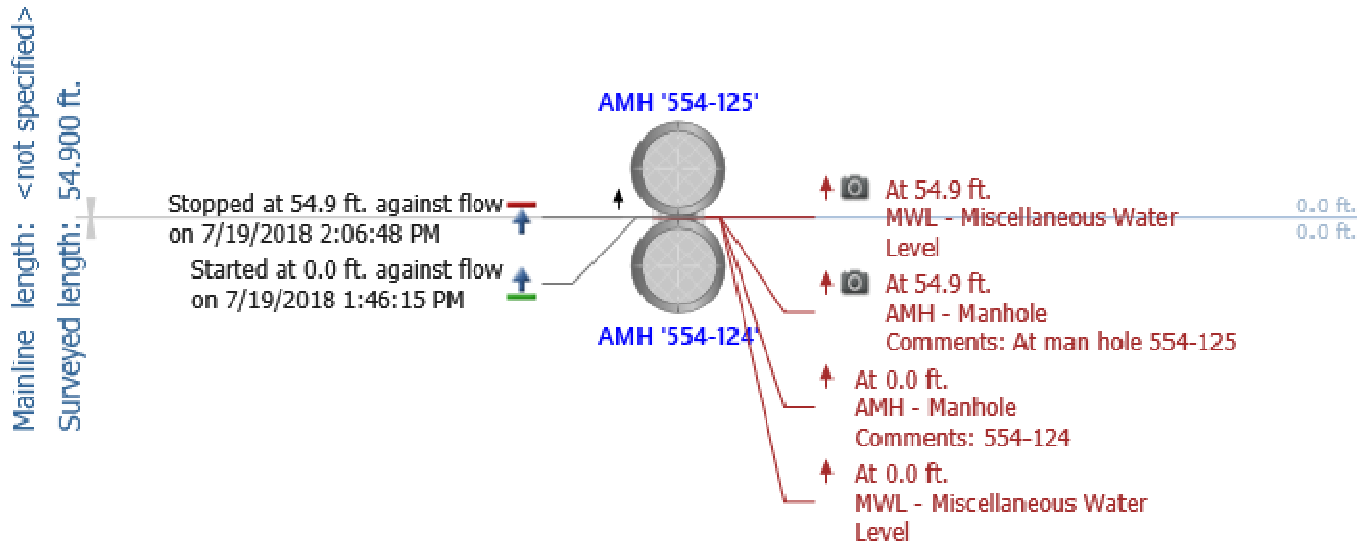


Notes: 554-124 to 554-123

- 36-in. CMP
- 55 LF
- Discoloration, minor surface corrosion visible at flow line
- Turbulent flow, obscures invert
- Debris caught at joints
- No major structural defects
- Flow: 2-3"
- Grade score of: 2

Main Inspections Pipe Run

Project name:	Mainline ID:	City:	Street:
Debarr storm cctv project	554-125 to 554-124	Anchorage	Debarr
Start date/time:	Direction:	Weather:	Location code:
7/19/2018 1:46 PM	U		
Shape:	Material:	Height:	Width:
C	CMP	12 in.	

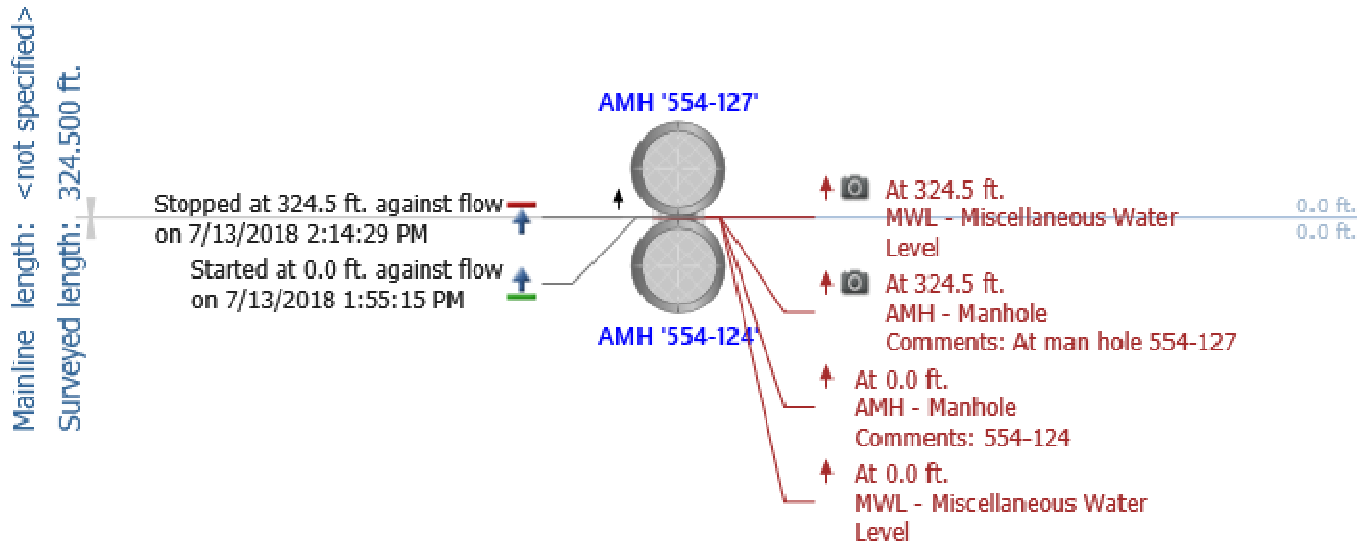


Notes: 554-125 to 554-124

- 12-in. CMP
- 55 LF
- Pipe cleaned
- Minor surface corrosion at pipe ends at joint
- Minimal debris left in invert post cleaning
- Surface corrosion visible in invert between 5:00 and 7:00 position, discoloration in bottom half of pipe
- Small horizontal deflections, pipe alignment is not perfectly linear
- Surface corrosion at spring line at upstream end
- Flow: Minimal
- Grade score of: 2

Main Inspections Pipe Run

Project name:	Mainline ID:	City:	Street:
Debarr storm cctv project	554-127 to 554-124	Anchorage	Debarr
Start date/time:	Direction:	Weather:	Location code:
7/13/2018 1:55 PM	U		
Shape:	Material:	Height:	Width:
C	CMP	36 in.	

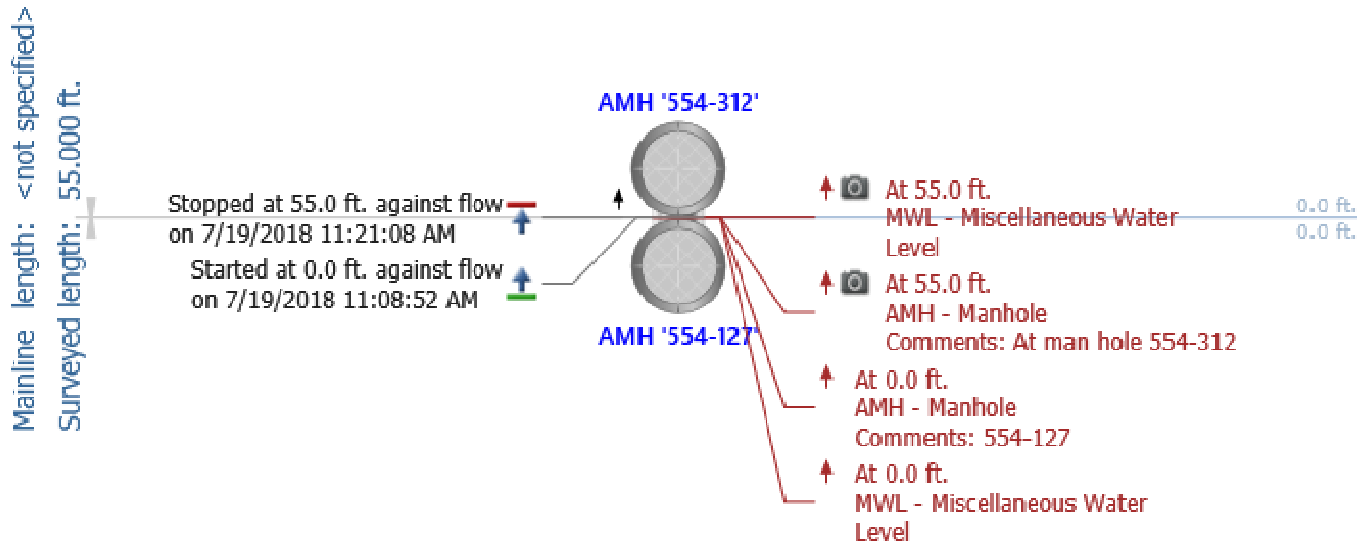


Notes: 554-127 to 554-124

- 36-in. CMP
- 325 LF
- Minor corrosion visible at flow line
- Corrosion in invert visible, obscured by high flow in pipe
- Minor debris caught at joints, likely from infiltration at joints
- Pinhole, 12:00 position at 220 LF
- No major defects observed
- Flow: 3-4"
- Grade score of: 3

Main Inspections Pipe Run

Project name:	Mainline ID:	City:	Street:
Debarr storm cctv project	554-312 to 554-127	Anchorage	Debarr
Start date/time:	Direction:	Weather:	Location code:
7/19/2018 11:08 AM	U		
Shape:	Material:	Height:	Width:
C	CMP	12 in.	

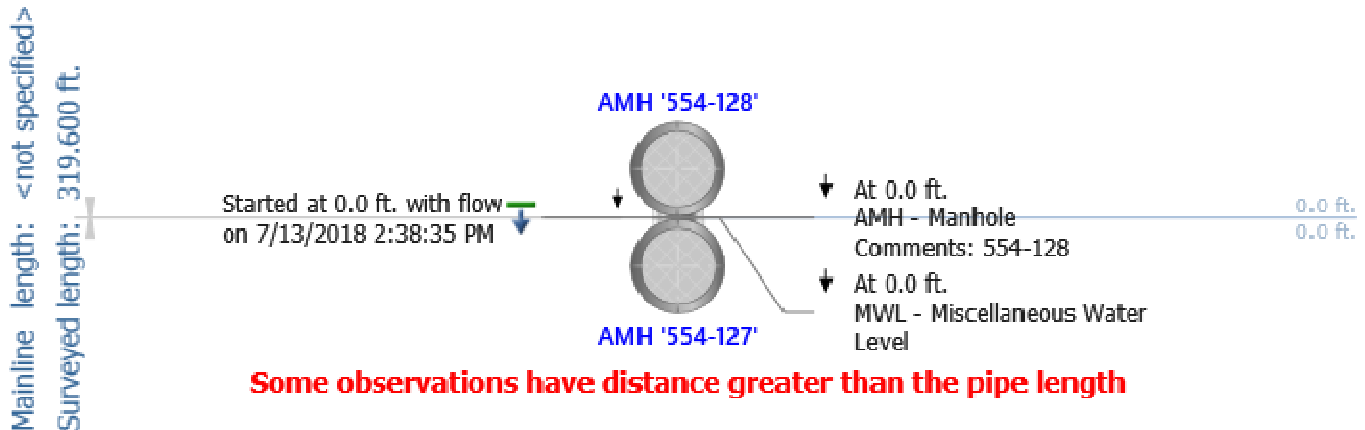


Notes: 554-312 to 554-127

- 12-in. CMP
- 55 LF
- 1-2" debris buildup at downstream end from 3 LF to 15 LF, 0-2" debris 30 LF to 43 LF, 1" debris at upstream end
- Minor surface corrosion at pipe ends at joints
- Minor surface corrosion in invert, visible at joints
- Surface corrosion in 3:00 position 50 LF to 55 LF
- Flow: None
- Grade score of: 2

Main Inspections Pipe Run

Project name:	Mainline ID:	City:	Street:
Debarr storm cctv project	554-128 - 554-127	Anchorage	Debarr
Start date/time:	Direction:	Weather:	Location code:
7/13/2018 2:38 PM	D		
Shape:	Material:	Height:	Width:
C	CMP	36 in.	

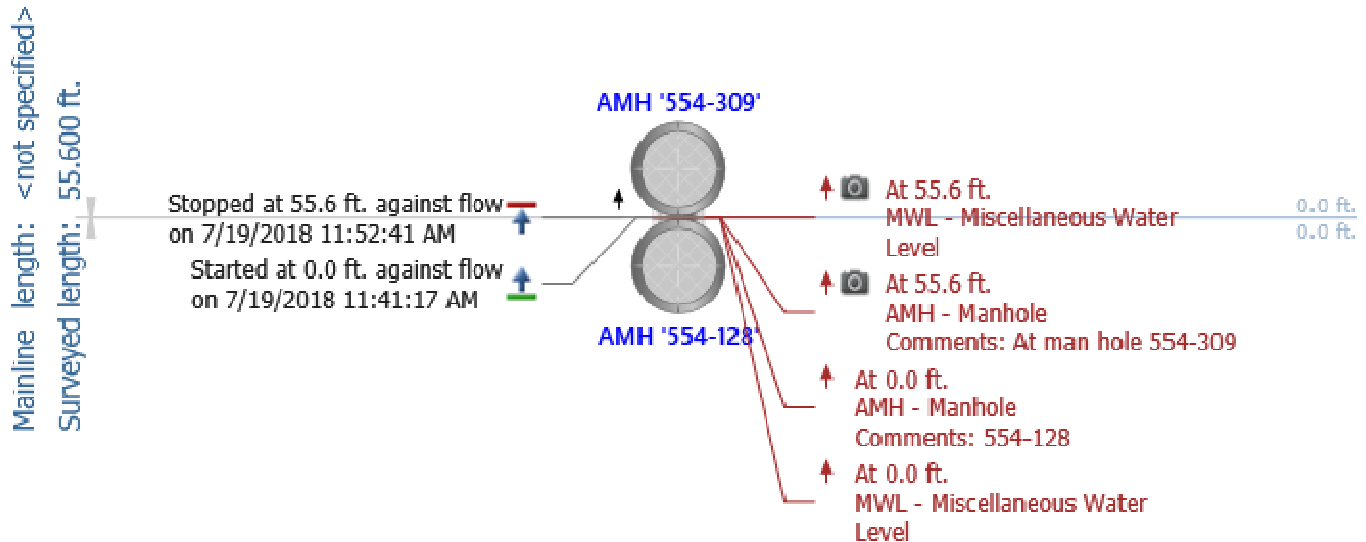


Notes: 554-128 to 554-127

- 36-in. CMP
- 320 LF
- Discoloration, 4:00 position to 8:00 position throughout pipe
- Surface corrosion at top of historical flow line, visible in invert when not obscured by flow, visible pitting
- Minor debris caught at joints, likely from infiltration at joints
- Visible infiltration at joint, 15 LF in 4:00 position, 36 LF in 4:00 and 8:00 position, 56 LF in 4:00 and 8:00 position, 76 LF in 4:00 and 8:00 position, 96 LF in 4:00 and 8:00 position, 137 LF in 4:00 position, 157 LF in 4:00 and 8:00 position, 178 LF in 4:00 and 8:00 position, 198 LF in 4:00 position, 218 LF in 4:00 and 8:00 position, 238 LF in 8:00 position
- No major structural defects
- Flow: 2-3"
- Grade score of: 3

Main Inspections Pipe Run

Project name:	Mainline ID:	City:	Street:
Debarr storm cctv project	554-309 to 554-128	Anchorage	Debarr
Start date/time:	Direction:	Weather:	Location code:
7/19/2018 11:41 AM	U		
Shape:	Material:	Height:	Width:
C	CMP	12 in.	

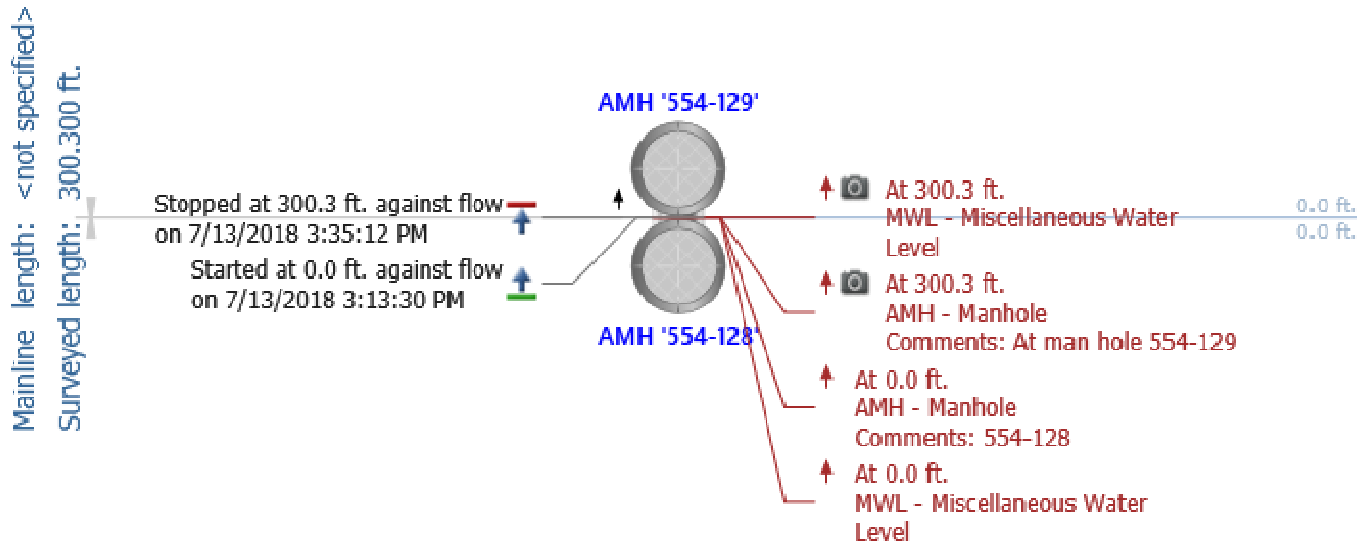


Notes: 554-309 to 554-128

- 12-in. CMP
- 56 LF
- 0-1" debris at joint, 7 LF, 24 LF, 3-4" debris at 35 LF and 42 LF, 4-5" of debris at upstream end various levels of debris throughout pipe
- Surface corrosion in top of pipe, 7 LF to 19 LF
- Surface corrosion in 5:00 and 7:00 position, 43 LF to end of pipe
- Minor surface corrosion at pipe ends at joints
- Surface corrosion, visible in invert at joints
- Flow: None
- Grade score of: 2

Main Inspections Pipe Run

Project name:	Mainline ID:	City:	Street:
Debarr storm cctv project	554-129 to 554-128	Anchorage	Debarr
Start date/time:	Direction:	Weather:	Location code:
7/13/2018 3:13 PM	U		
Shape:	Material:	Height:	Width:
C	CMP	36 in.	

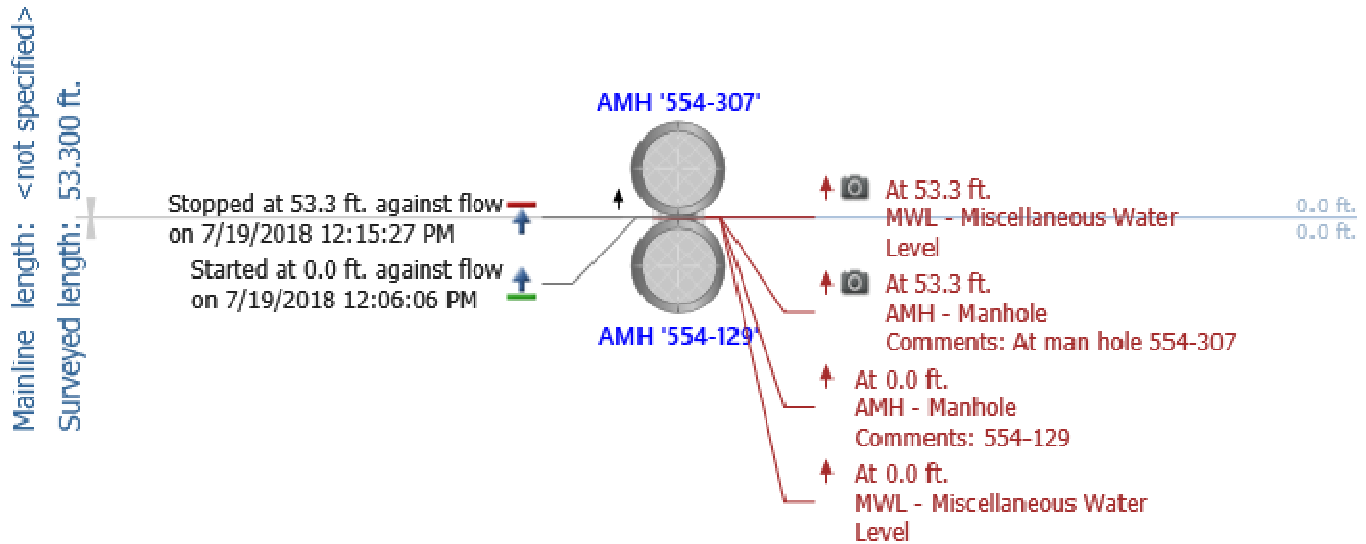


Notes: 554-129 to 554-128

- 36-in. CMP
- 300 LF
- Discoloration and surface corrosion, 4:00 to 8:00 position 3 LF to
- Minor debris caught at joints
- Infiltration at joint, 4:00 position, 80 LF
- Minimal debris in pipe
- Invert partially obscured by debris, probed from manhole, metal loss present
- Flow: 1-2"
- Grade score of: 3

Main Inspections Pipe Run

Project name:	Mainline ID:	City:	Street:
Debarr storm cctv project	554-307 to 554-129	Anchorage	Debarr
Start date/time:	Direction:	Weather:	Location code:
7/19/2018 12:06 PM	U		
Shape:	Material:	Height:	Width:
C	CMP	12 in.	

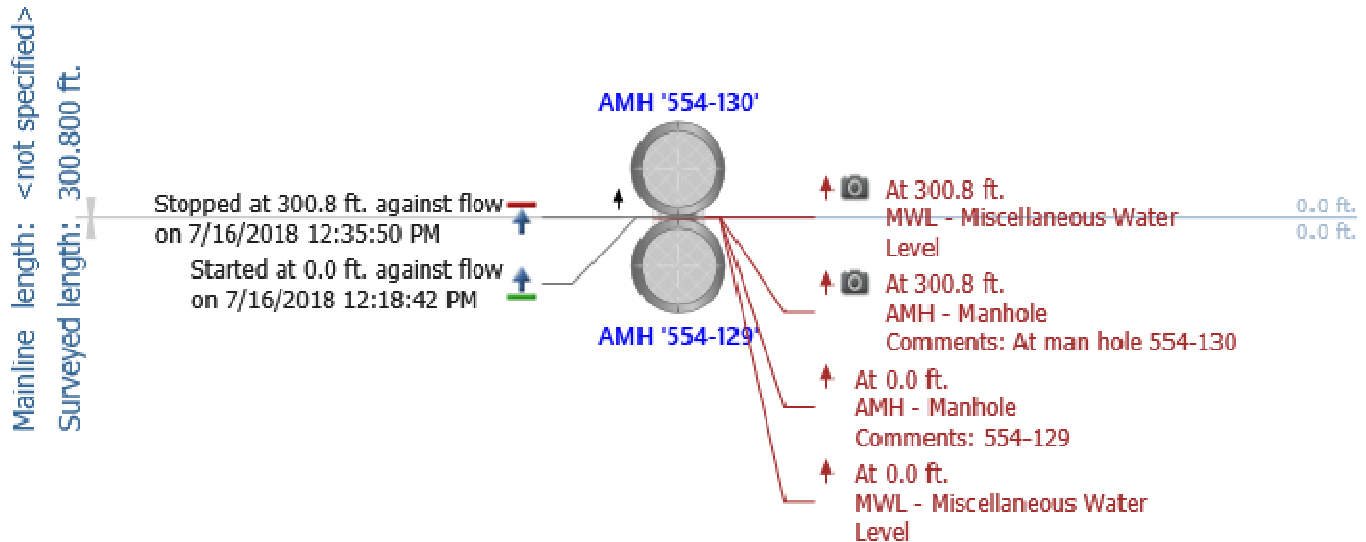


Notes: 554-307 to 554-129

- 12-in. CMP
- 53 LF
- 1" deformation in 9:00 position, 7 LF
- 0-1" debris, 8 LF to 15 LF, 24 LF to 32 LF, 2-3" at 45 LF, pipe half full at upstream end
- Surface corrosion in top of pipe, 18 LF to 20 LF
- Surface corrosion at pipe ends at joints
- Surface corrosion visible in invert, 51 LF
- Flow: None
- Grade score of: 2

Main Inspections Pipe Run

Project name:	Mainline ID:	City:	Street:
Debarr storm cctv project	554-130 to 554-129	Anchorage	Debarr
Start date/time:	Direction:	Weather:	Location code:
7/16/2018 12:18 PM	U		
Shape:	Material:	Height:	Width:
C	CMP	36 in.	



Notes: 554-130 to 554-129

- 36-in. CMP
- 301 LF
- Discoloration from 4:00 to 8:00 position, minor surface corrosion at historic flow line, visible at joints, partially visible in invert but mostly obscured by debris, inverts probed, metal loss observed
- 0-1" of debris in invert
- Debris at joints, debris above flow line assumed to be from infiltration
- Flow: 2-3"
- Grade score of: 3



CUES, Inc.
3600 Rio Vista Avenue
Orlando, FL 32805
Phone: 407-849-0190
Fax: 407-425-1569

Main Inspections Pipe Run

Project name:	Mainline ID:	City:	Street:
Debarr storm cctv project	MH 554-157 to 554-156	Anchorage	Debarr
Start date/time:	Direction:	Weather:	Location code:
9/6/2018 11:36 AM	U		
Shape:	Material:	Height:	Width:
C	CMP	36 in.	

Mainline length: <not specified>
Surveyed length: 6.0 ft.

Notes: 554-157 to 554-156

- Short pipe segment between manholes
- Surface corrosion visible in invert
- Flow: 2-3"
- Grade score of: 2



CUES, Inc.
3600 Rio Vista Avenue
Orlando, FL 32805
Phone: 407-849-0190
Fax: 407-425-1569

Main Inspections Pipe Run

Project name:	Mainline ID:	City:	Street:
Debarr storm cctv project	MH 554-156 to 554-130	Anchorage	Debarr
Start date/time:	Direction:	Weather:	Location code:
9/6/2018 11:23 AM	D		
Shape:	Material:	Height:	Width:
Ellipse	CMP	36x23 in.	

Mainline length: <not specified>
Surveyed length: 66.6 ft.

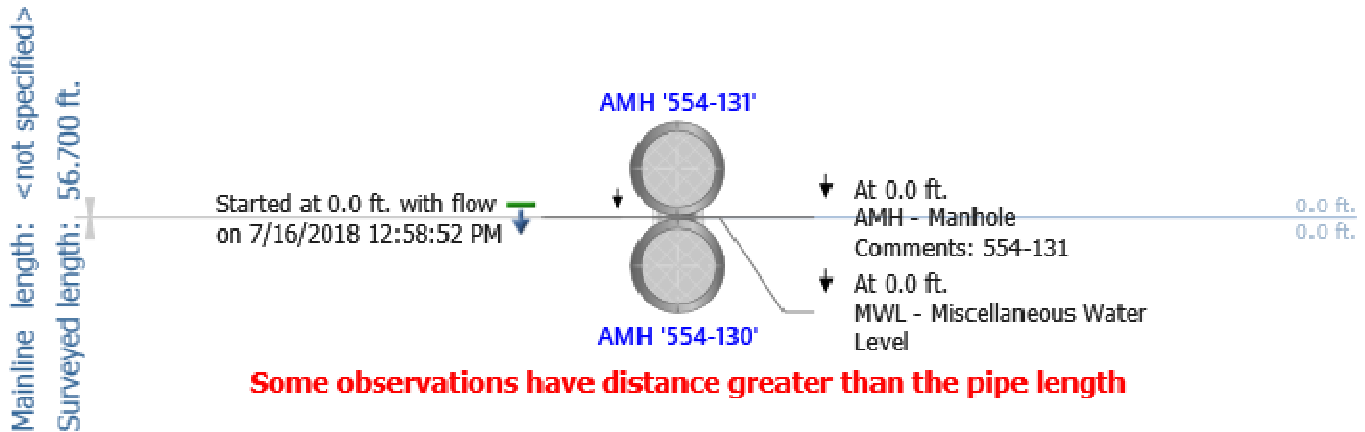
Observations:

Notes: 554-156 to 554-130

- 36" by 23" CMP
- 67 LF
- Evidence of corrosion visible in invert, rust colored debris in pipe
- Surface corrosion visible at flow line
- Approximately 2" of debris in pipe
- Slope steepens, flow becomes faster and level decreases to approximately 3" at 50 LF
- Use asbuilts to confirm pipe type is arch/ellipse
- Flow: 4-5"
- Grade score of: 3

Main Inspections Pipe Run

Project name:	Mainline ID:	City:	Street:
Debarr storm cctv project	554-131 - 554-130	Anchorage	Debarr
Start date/time:	Direction:	Weather:	Location code:
7/16/2018 12:58 PM	D		
Shape:	Material:	Height:	Width:
C	CMP	24 in.	

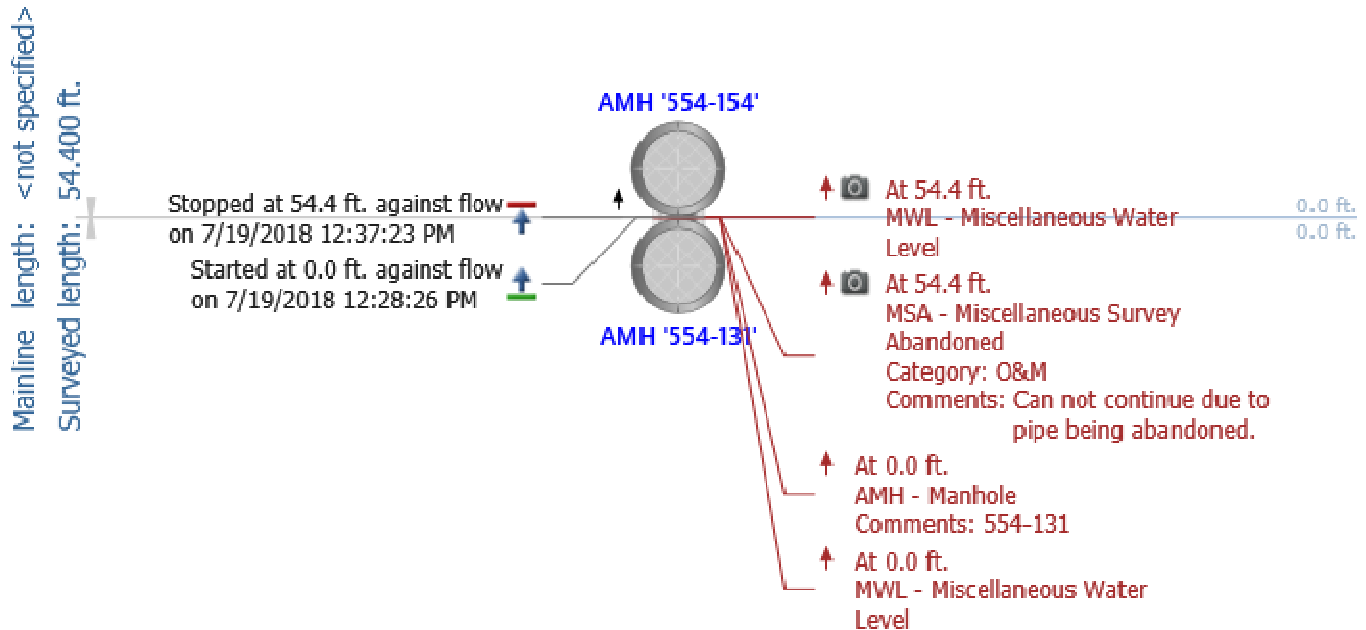


Notes: 554-131 to 554-130

- 24-in. CMP
- 57 LF
- Minimal debris in invert
- Grade steepens at 38 LF
- Minor surface corrosion in invert, visible at joints when not obscured by debris
- No major defects observed
- Flow: 0-1"
- Grade score of: 2

Main Inspections Pipe Run

Project name:	Mainline ID:	City:	Street:
Debarr storm cctv project	554-154 to 554-131	Anchorage	Debarr
Start date/time:	Direction:	Weather:	Location code:
7/19/2018 12:28 PM	U		
Shape:	Material:	Height:	Width:
C	CMP	12 in.	

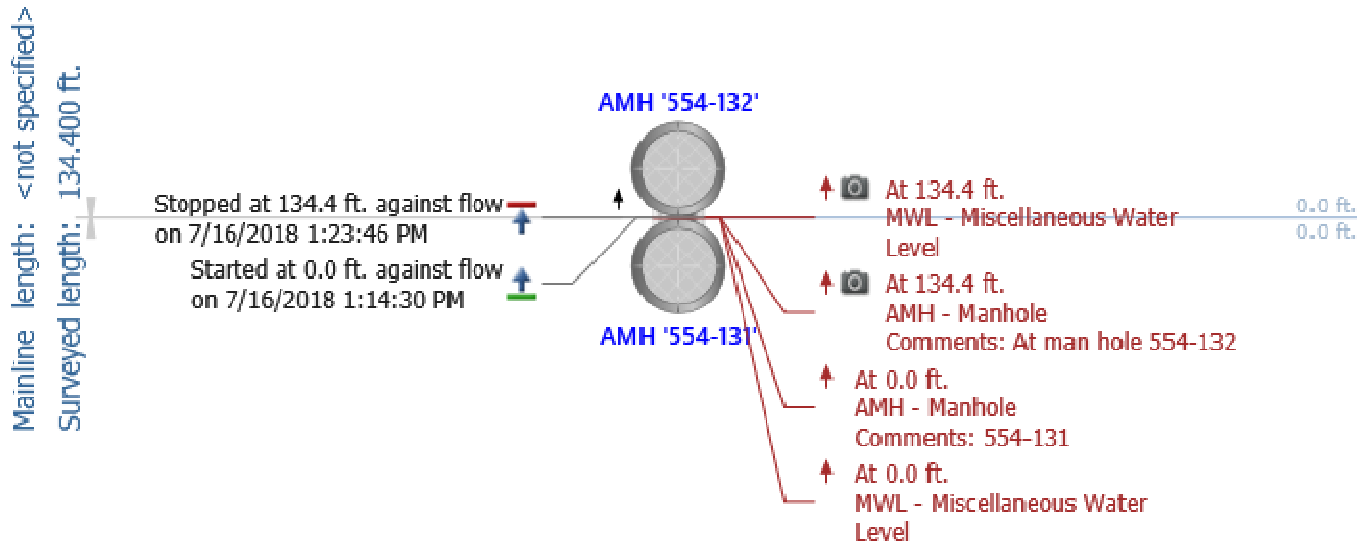


Notes: 554-154 to 554-131

- 12-in. CMP
- 54 LF
- 0-2" debris throughout pipe
- Upstream structure not located above ground
- Corrosion at pipe ends at joints
- Corrosion visible in invert at upstream end
- Upstream end appears to be abandoned with grout, pipe appears to be structurally intact
- Flow: None
- Grade score of: 3

Main Inspections Pipe Run

Project name:	Mainline ID:	City:	Street:
Debarr storm cctv project	554-131A to 554-131	Anchorage	Debarr
Start date/time:	Direction:	Weather:	Location code:
7/16/2018 1:14 PM	U		
Shape:	Material:	Height:	Width:
C	CMP	24 in.	

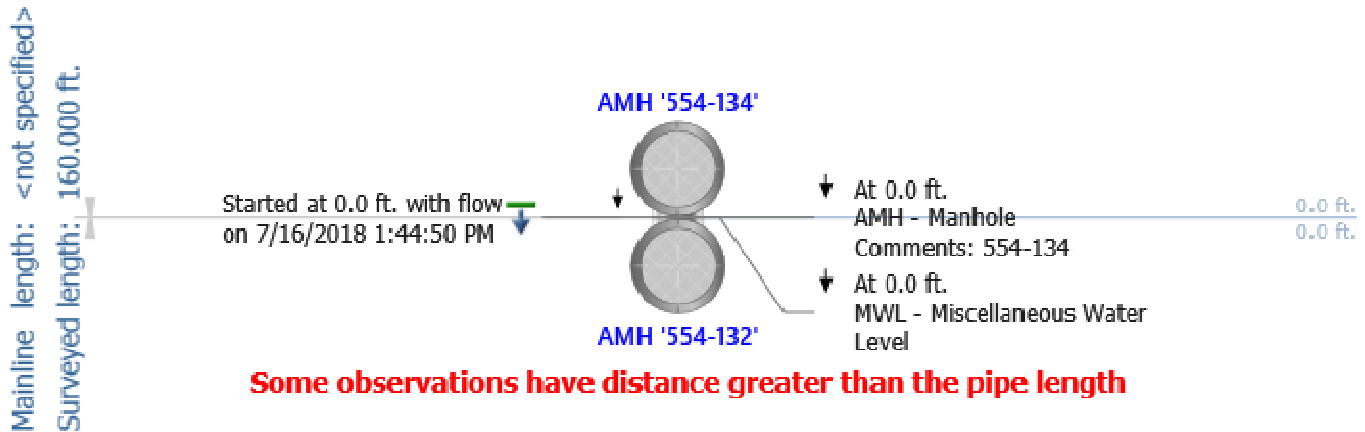


Notes: 554-131A to 554-131

- 24-in. CMP
- 134 LF
- Minimal debris in pipe
- Minor surface corrosion visible in invert when not obscured by debris
- Possible belly in pipe at 101 LF
- No major defects observed
- Flow: 0-1"
- Grade score of: 1

Main Inspections Pipe Run

Project name:	Mainline ID:	City:	Street:
Debarr storm cctv project	554-132 to 554-131A	Anchorage	Debarr
Start date/time:	Direction:	Weather:	Location code:
7/16/2018 1:44 PM	D		
Shape:	Material:	Height:	Width:
C	CMP	24 in.	

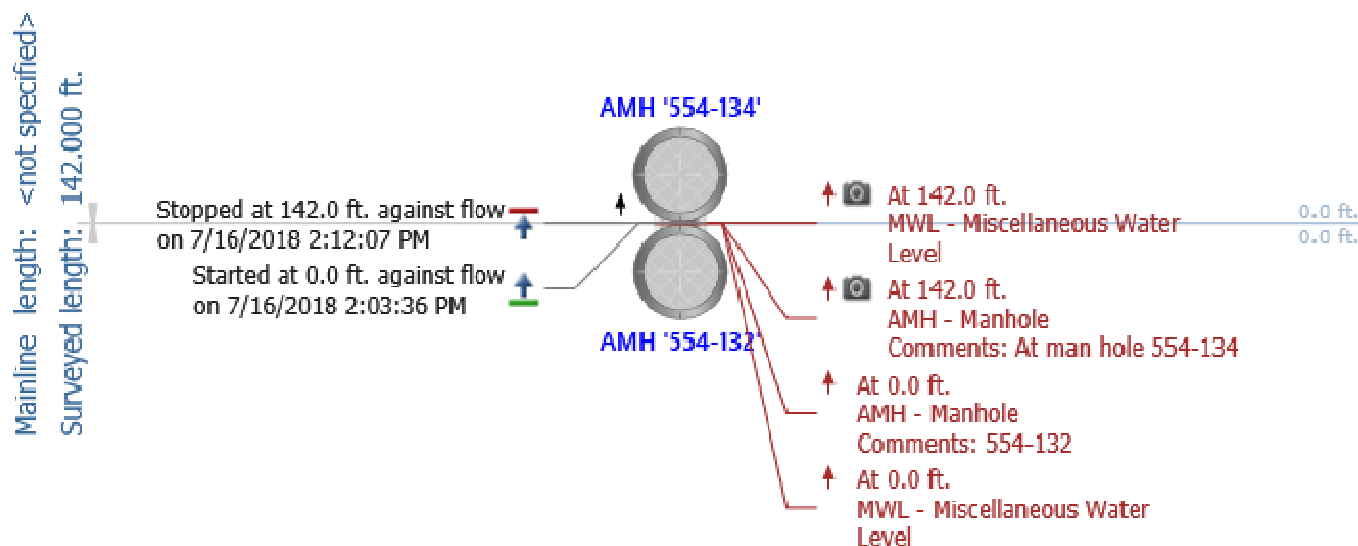


Notes: 554-132 to 554-131A

- 24-in. CMP
- 160 LF
- 1-2" of debris in pipe, 3 LF to approximately 40 LF, 60 LF to approximately 110 LF, 115 LF to end of survey
- Discoloration and surface corrosion visible in invert at joint at 54 LF, 114 LF
- No major structural defects observed
- Flow: Minimal
- Grade score of: 2

Main Inspections Pipe Run

Project name:	Mainline ID:	City:	Street:
Debarr storm cctv project	554-134 to 554-132	Anchorage	Debarr
Start date/time:	Direction:	Weather:	Location code:
7/16/2018 2:03 PM	U		
Shape:	Material:	Height:	Width:
C	CMP	24 in.	

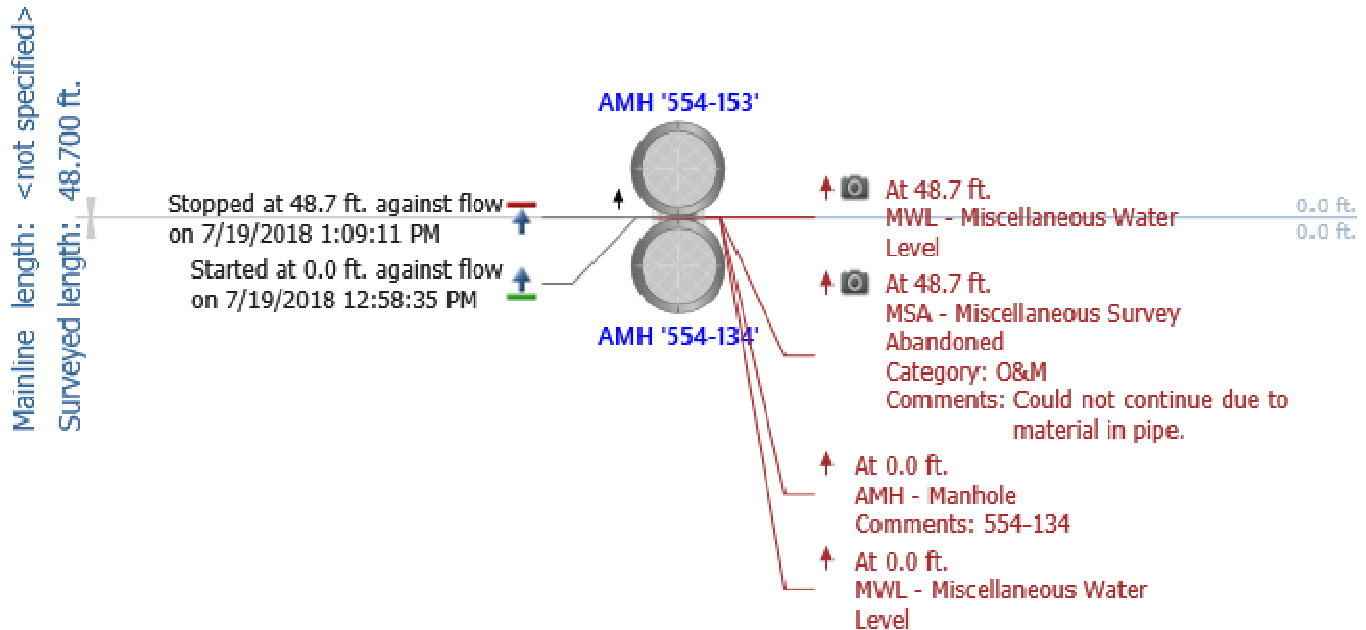


Notes: 554-134 to 554-132

- 24-in. CMP
- 142 LF
- Minimal debris in pipe, increases to 1-2" at approximately 40 LF to 50 LF
- Oval pipe, approximately 6" deformation in 1:00 position, belly in pipe 45 LF
- Surface corrosion/discoloration in invert, visible at joint at 60 LF, 80 LF, 100 LF, 120 LF
- Flow: Minimal
- Grade score of: 3

Main Inspections Pipe Run

Project name:	Mainline ID:	City:	Street:
Debarr storm cctv project	554-153 to 554-134	Anchorage	Debarr
Start date/time:	Direction:	Weather:	Location code:
7/19/2018 12:58 PM	U		
Shape:	Material:	Height:	Width:
C	CMP	12 in.	

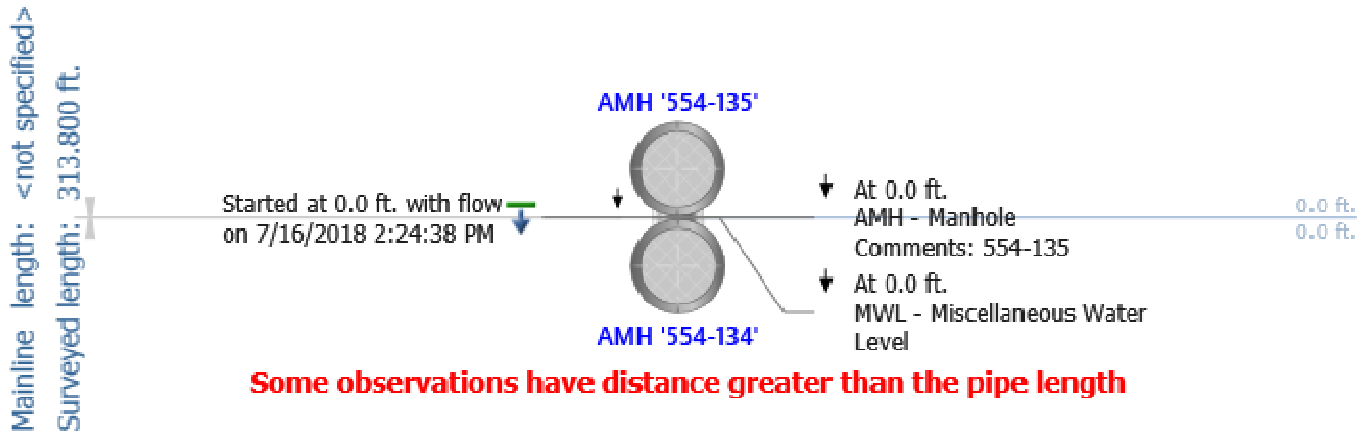


Notes: 554-153 to 554-134

- 12-in. CMP
- 60 LF
- Surface corrosion visible at pipe ends at joints
- 1-2" debris 3 LF to 38 LF, 3-4" 38 LF to end of survey, survey concluded at 48 LF due to debris
- Surface corrosion visible at 4:00 and 8:00 position. 24 LF to end of survey
- Evidence of corrosion in invert, rust color visible in debris, pipe requires cleaning to confirm invert condition
- Flow: None
- Grade score of: 2

Main Inspections Pipe Run

Project name:	Mainline ID:	City:	Street:
Debarr storm cctv project	443-135 - 554-134	Anchorage	Debarr
Start date/time:	Direction:	Weather:	Location code:
7/16/2018 2:24 PM	D		
Shape:	Material:	Height:	Width:
C	CMP	24 in.	

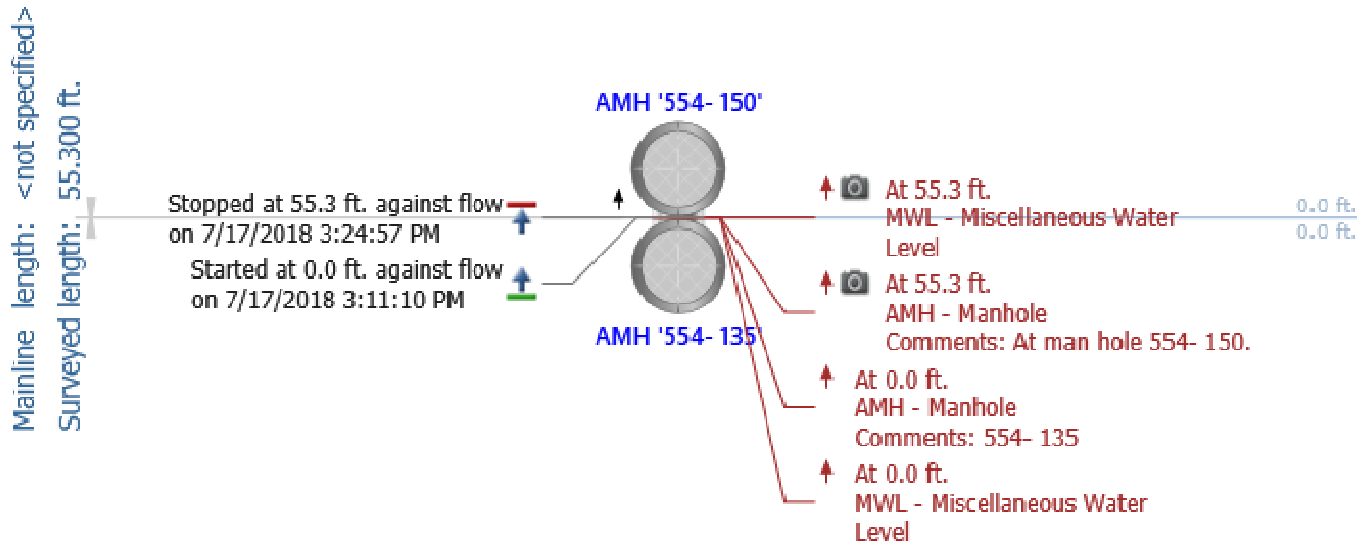


Notes: 554-135 to 554-134

- 24-in. CMP
- 314 LF
- 1-2" debris, 3 LF to 90 LF, 0-1" 90 LF
- Hole in joint soil visible, 1:00 position, 50 LF
- Surface corrosion visible in invert at joint, 131 LF, 191 LF, 252 LF
- Flow: 1-2"
- Grade score of: 2

Main Inspections Pipe Run

Project name:	Mainline ID:	City:	Street:
Debarr storm cctv project	554-150 to 554-135	Anchorage	Debarr
Start date/time:	Direction:	Weather:	Location code:
7/17/2018 3:11 PM	U		
Shape:	Material:	Height:	Width:
C	CMP	12 in.	

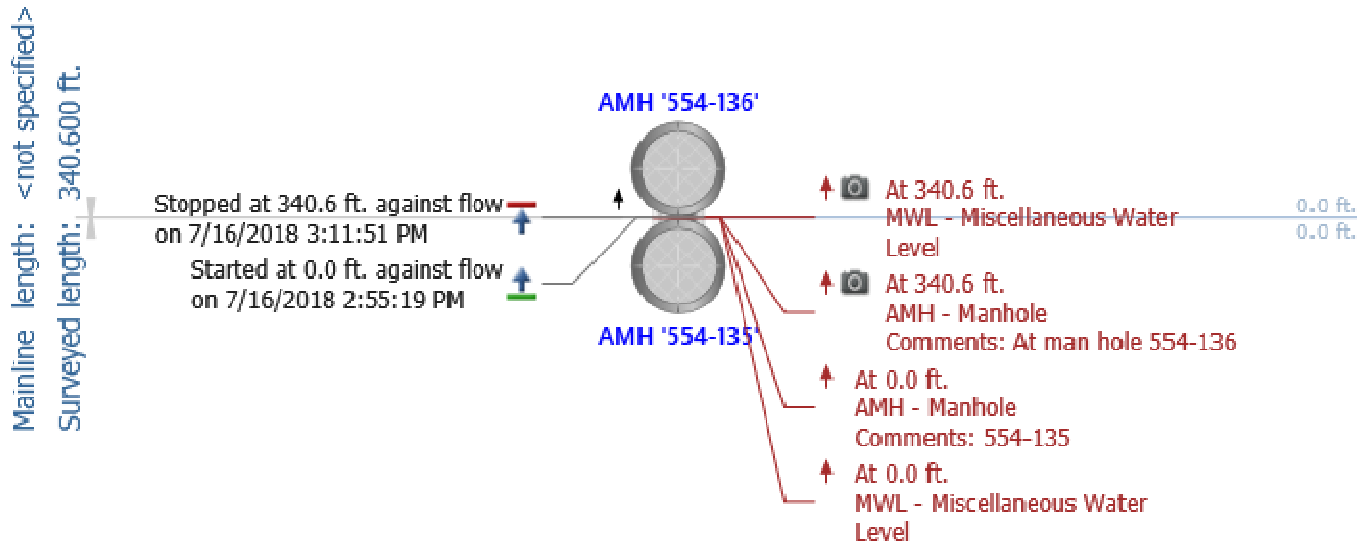


Notes: 554-150 to 554-135

- 12-in. CMP
- 55 LF
- Horizontal bend in pipe, 7 LF
- Pipe ends corroded at joints
- 0-1" of debris in pipe to 45 LF, 1-2" 45 LF to end
- Corrosion in 3:00 and 9:00 position, 35 LF to end
- Flow: Minimal
- Grade score of: 2

Main Inspections Pipe Run

Project name:	Mainline ID:	City:	Street:
Debarr storm cctv project	554-136 to 554-135	Anchorage	Debarr
Start date/time:	Direction:	Weather:	Location code:
7/16/2018 2:55 PM	U		
Shape:	Material:	Height:	Width:
C	CMP	24 in.	

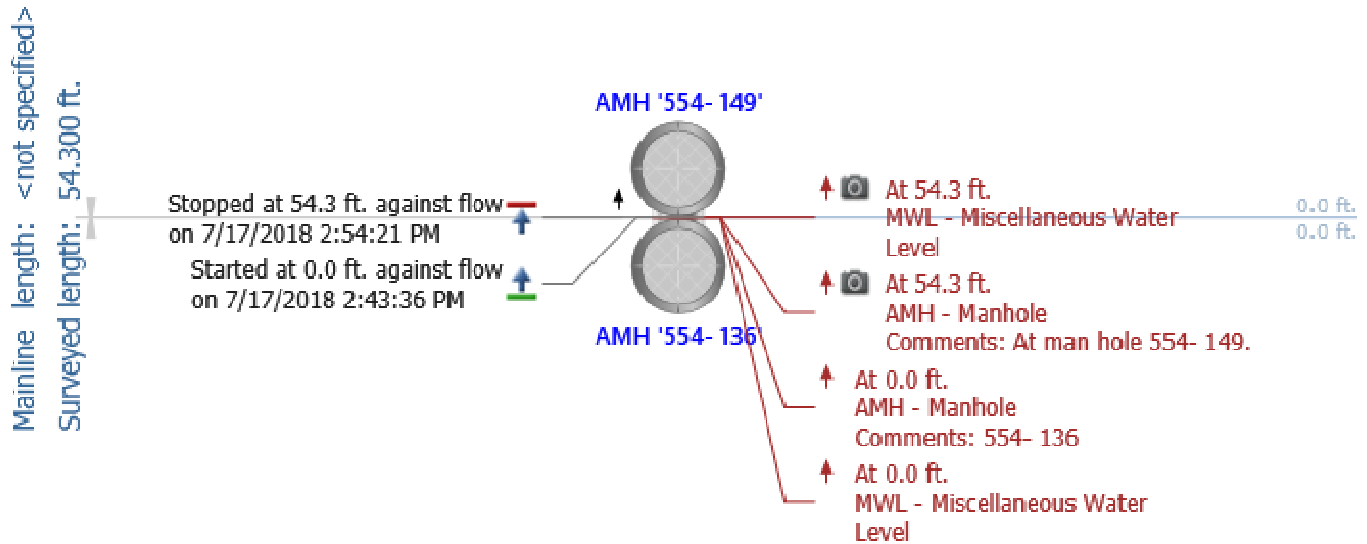


Notes: 554-136 to 554-135

- 24-in. CMP
- 341 LF
- 0-1" debris in invert, except where noted otherwise
- Debris increases from 0-1" to 1-2" from 30 LF to 50 LF, appears to be belly in the pipe
- Debris 1-2" 80 LF to 106 LF possible belly
- Discoloration and minor surface corrosion in invert, visible at joints when not obscured by debris
- 6-8" deformation, 7:00 position at 76 LF
- Flow: Minimal
- Grade score of: 2

Main Inspections Pipe Run

Project name:	Mainline ID:	City:	Street:
Debarr storm cctv project	554-149 to 554-136	Anchorage	Debarr
Start date/time:	Direction:	Weather:	Location code:
7/17/2018 2:43 PM	U		
Shape:	Material:	Height:	Width:
C	CMP	12 in.	

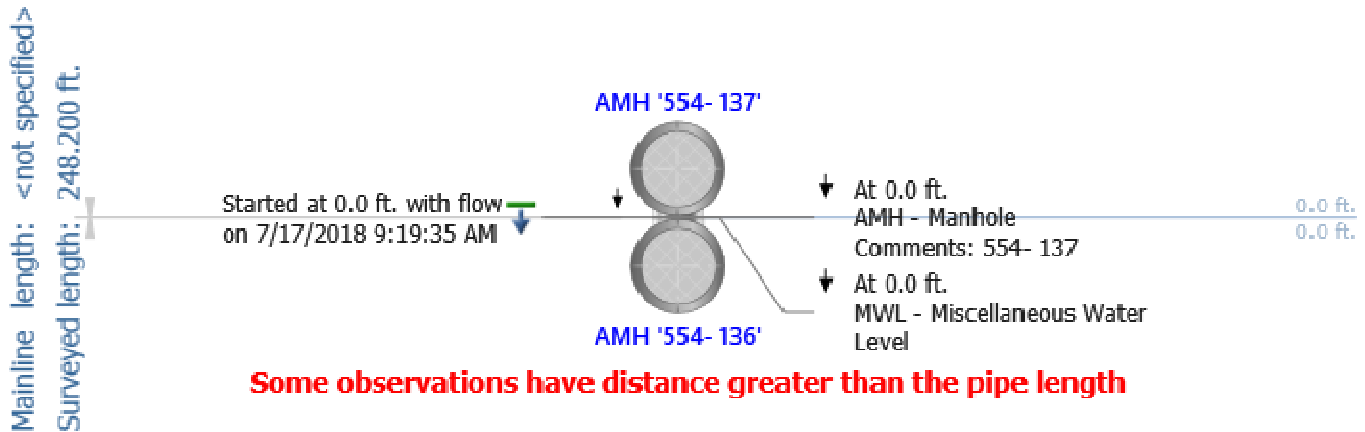


Notes: 554-149 to 554-136

- 12-in. CMP
- 54 LF
- Surface corrosion/discoloration visible in 4:00 and 8:00 position
- Corrosion at pipe ends at joints
- 0-3" debris in pipe
- No major structural defects
- Flow: Minimal
- Grade score of: 2

Main Inspections Pipe Run

Project name:	Mainline ID:	City:	Street:
Debarr storm cctv project	554- 137 - 554- 136	Anchorage	Debarr
Start date/time:	Direction:	Weather:	Location code:
7/17/2018 9:19 AM	D		
Shape:	Material:	Height:	Width:
C	CMP	24 in.	

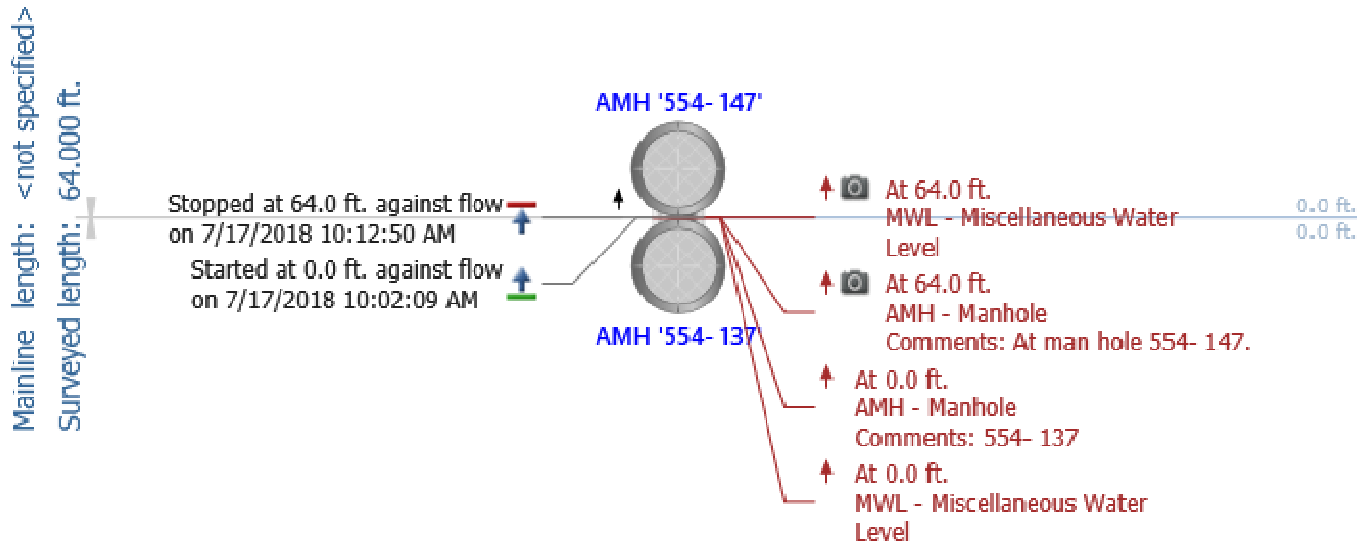


Notes: 554-137 to 554-136

- 24-in. CMP
- 248 LF
- Discoloration between 4:00 and 8:00 position
- Various levels of debris throughout pipe, 0-3"
- Approximately 3" diameter hole in pipe, 48 LF, 10:00 position
- Minor corrosion visible in invert when not obscured by debris
- 1" deformation, 9:00 position at 72 LF
- Corrosion at pipe ends at joints
- Flow: Minimal
- Grade score of: 2

Main Inspections Pipe Run

Project name:	Mainline ID:	City:	Street:
Debarr storm cctv project	554-147 to 554-137	Anchorage	Debarr
Start date/time:	Direction:	Weather:	Location code:
7/17/2018 10:02 AM	U		
Shape:	Material:	Height:	Width:
C	PE	18 in.	

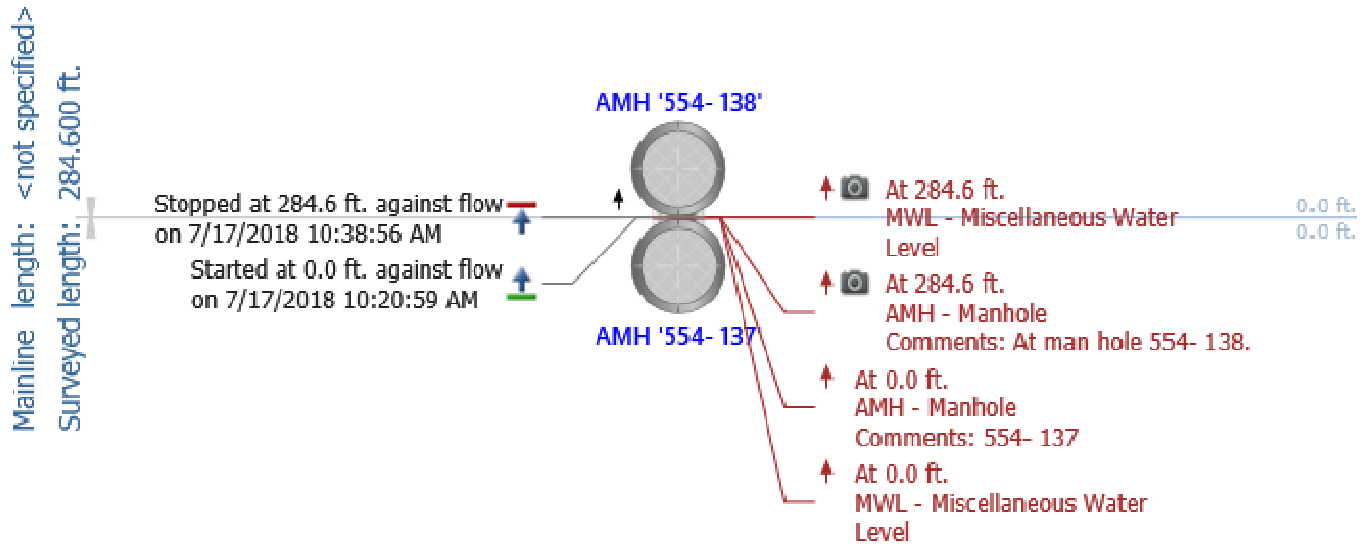


Notes: 554-147 to 554-137

- 18-in. CPEP
- 64 LF
- 1-2" debris buildup in downstream end, 0-1" of debris to approximately 16 LF
- 3-4" of debris in upstream end
- No major defects observed
- Flow: 0-1"
- Grade score of: 1

Main Inspections Pipe Run

Project name:	Mainline ID:	City:	Street:
Debarr storm cctv project	554-138 to 554-137	Anchorage	Debarr
Start date/time:	Direction:	Weather:	Location code:
7/17/2018 10:20 AM	U		
Shape:	Material:	Height:	Width:
C	CMP	24 in.	

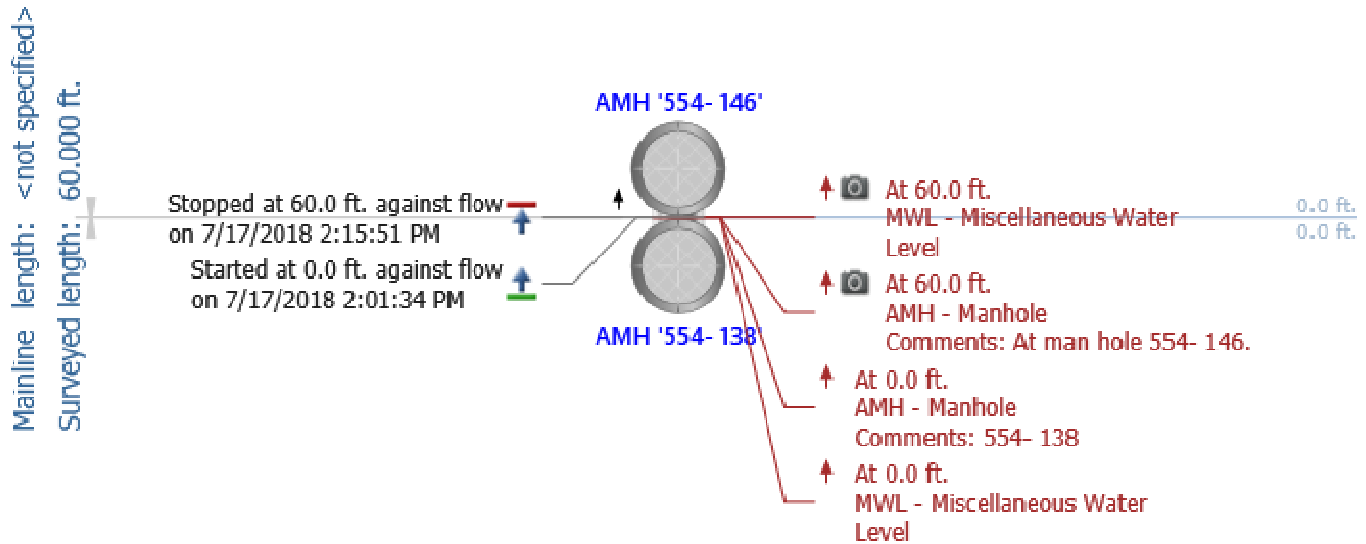


Notes: 554-138 to 554-137

- 24-in. CMP
- 285 LF
- Pipe Footage Missing
- Flow: N/A
- Grade score of: N/A

Main Inspections Pipe Run

Project name:	Mainline ID:	City:	Street:
Debarr storm cctv project	554-146 to 554-138	Anchorage	Debarr
Start date/time:	Direction:	Weather:	Location code:
7/17/2018 2:01 PM	U		
Shape:	Material:	Height:	Width:
C	CMP	12 in.	

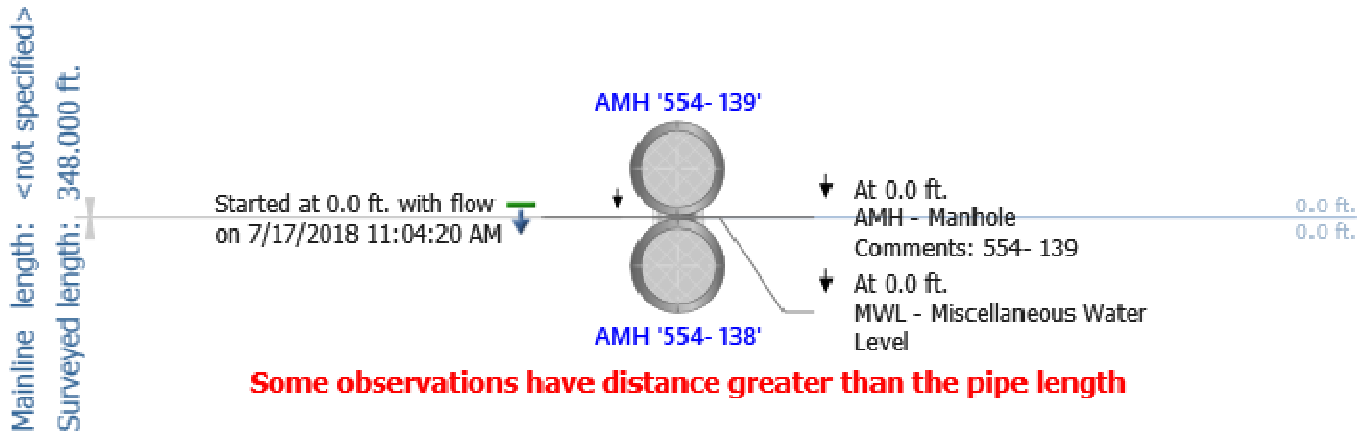


Notes: 554-146 to 554-138

- 12-in. CMP
- 60 LF
- Surface corrosion at pipe ends at joins
- Surface corrosion visible in invert
- 0-1" of debris in invert, increases to approximately 1-2" at 30 LF, half-full at 54 LF
- Surface corrosion at 4:00 and 8:00 position 36 LF to end of pipe
- Flow: Minimal
- Grade score of: 2

Main Inspections Pipe Run

Project name:	Mainline ID:	City:	Street:
Debarr storm cctv project	554- 139 - 554- 138	Anchorage	Debarr
Start date/time:	Direction:	Weather:	Location code:
7/17/2018 11:04 AM	D		
Shape:	Material:	Height:	Width:
C	CMP	24 in.	



Notes: 554-139 to 554-138

- 24-in. CMP
- 348 LF
- Various levels of debris throughout pipe, approximately 1-3"
- Discoloration in bottom half of pipe
- Minor surface corrosion visible in invert, visible when camera pans at joints where invert not obscured by debris
- No major structural defects
- Flow: 0-1"
- Grade score of: 2



CUES, Inc.
3600 Rio Vista Avenue
Orlando, FL 32805
Phone: 407-849-0190
Fax: 407-425-1569

Main Inspections Pipe Run

Project name:	Mainline ID:	City:	Street:
Debarr storm cctv project	MH 554-145 to 554-144	Anchorage	Debarr
Start date/time:	Direction:	Weather:	Location code:
9/6/2018 9:56 AM	U		
Shape:	Material:	Height:	Width:
C	CMP	12 in.	

Mainline length: <not specified>
Surveyed length: 66.9 ft.

Notes: 554-145 to 554-144

- 12-in. CMP
- 67 LF
- Discoloration and surface corrosion in 4:00 and 8:00 position
- Discoloration in bottom half of pipe
- Minor surface corrosion at pipe ends at joints
- Approximately 1-2" of debris in pipe
- Invert obscured by debris, unable to determine condition of invert
- Flow: 1-2"
- Grade score of: 2



CUES, Inc.
3600 Rio Vista Avenue
Orlando, FL 32805
Phone: 407-849-0190
Fax: 407-425-1569

Main Inspections Pipe Run

Project name:	Mainline ID:	City:	Street:
Debarr storm cctv project	MH 554-144 to 554-143	Anchorage	Debarr
Start date/time:	Direction:	Weather:	Location code:
9/6/2018 9:45 AM	D		
Shape:	Material:	Height:	Width:
C	CMP	12 in.	

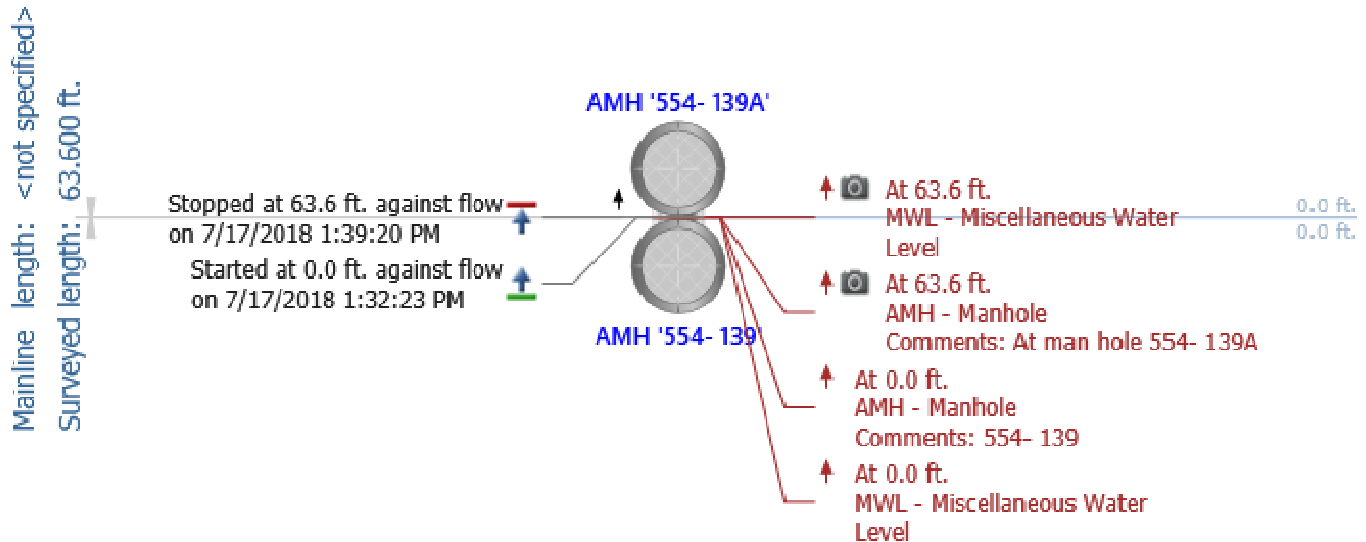
Mainline length: <not specified>
Surveyed length: 25.1 ft.

Notes: 554-144 to 554-143

- 12-in. CMP
- 25 LF
- 1-2" of debris
- Surface discoloration in bottom half of pipe, surface corrosion/discoloration in 3:00 and 9:00 position
- Invert obscured by debris, unable to determine if corroded, color of debris indicates some degree of corrosion is occurring
- Flow: Minimal
- Grade score of: 3

Main Inspections Pipe Run

Project name:	Mainline ID:	City:	Street:
Debarr storm cctv project	554-143 to 554-139	Anchorage	Debarr
Start date/time:	Direction:	Weather:	Location code:
7/17/2018 1:32 PM	U		
Shape:	Material:	Height:	Width:
C	CMP	12 in.	

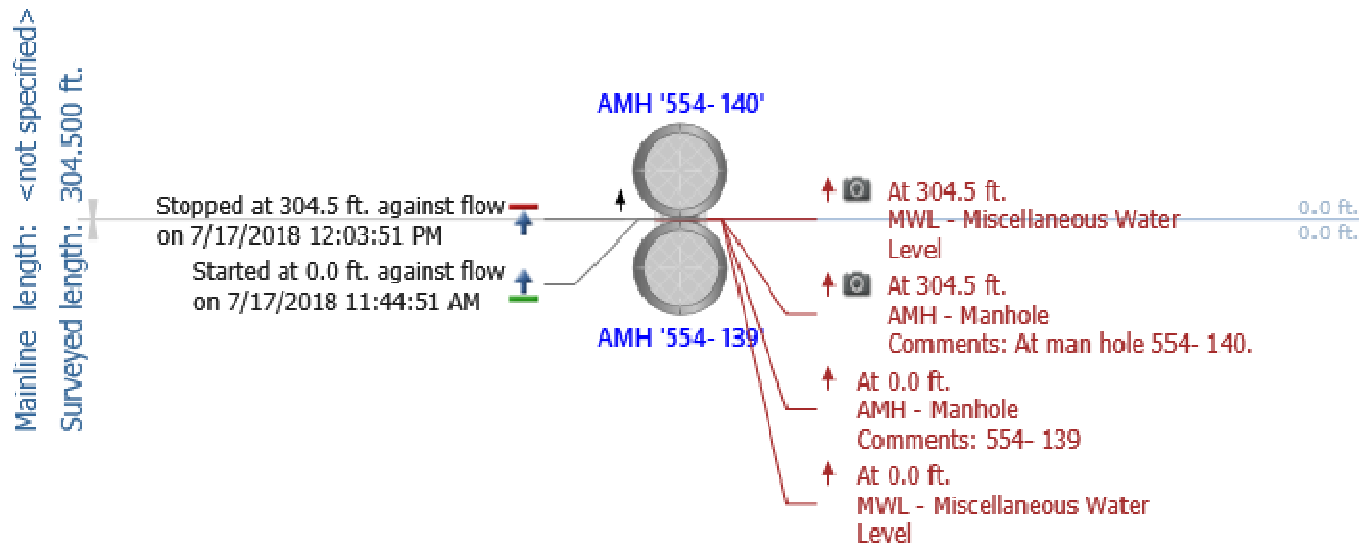


Notes: 554-143 to 554-139

- 12-in. CMP
- 64 LF
- 0-1" debris, debris increases to 2-3" at upstream end
- Surface corrosion visible in invert at joints
- Surface corrosion around joint, 39 LF
- Minor surface corrosion at 3:00 and 9:00 position, discoloration between 4:00 and 8:00 position
- No major structural defects
- Flow: 0-1"
- Grade score of: 2

Main Inspections Pipe Run

Project name:	Mainline ID:	City:	Street:
Debarr storm cctv project	554-140 to 554-139	Anchorage	Debarr
Start date/time:	Direction:	Weather:	Location code:
7/17/2018 11:44 AM	U		
Shape:	Material:	Height:	Width:
C	CMP	24 in.	



Notes: 554-140 to 554-139

- 24-in. CMP
- 305 LF
- 0-2" debris in pipe throughout pipe
- Discoloration 4:00 position to 8:00 position
- Invert obscured by debris, unable to observe for corrosion
- No major defects observed
- Flow: Minimal
- Grade score of: 1

Storm Drain Structure Summary and Inspection Reports

CR NHS Storm Drain Condition Report
PROJECT NO. 0A310554 / Z591280000

	NHS Storm Drain Structure Conditions Debarr Road (Bragaw Street to Muldoon Road)			Defect Grades: 0=No Defect, 1=Minor Defect, 2=Minor to Moderate Defect, 3=Moderate Defect, 4=Significant Defect, 5=Most Significant Defect											
		Avg. Height	Material	Condition of Components											
Page # in Appendix A	Structure No.	Rim-Invert (in.)	Type	Overall	Cover	Frame	Chimney	Steps	Cone	Reducing Slab	Barrel	Base	Connections (Influent)	Connections (Effluent)	Storm Drain Structure Observations
1	577-41	N/A	Pre-cast Concrete	N/A	1	1	2	1	N/A	1	N/A	N/A	N/A	N/A	Partial inspection, 3 steps west, 3 steps south
2	577-43	106	Pre-cast Concrete	1	1	1	2	1	1	1	N/A	1	2	2	4 steps east, 2 north, metal loss observed in inverts of mainline pipes, too much debris for accurate sump and base height
4	385-29	64	Pre-cast Concrete	2	2	2	N/A	N/A	N/A	1	1	1	N/A	N/A	
5	385-32	92	Pre-cast Concrete	3	2	2	4	1	2	2	2	2	1	N/A	
8	554-460	34	Pre-cast Concrete	1	1	2	N/A	N/A	N/A	N/A	N/A	1	N/A	1	
9	554-461	34	Pre-cast Concrete	1	1	1	N/A	N/A	N/A	N/A	N/A	1	N/A	1	
	554-462	34	Pre-cast Concrete	1	1	1	N/A	N/A	N/A	N/A	N/A	1	1	2	
11	554-450	78	Pre-cast Concrete	1	1	1	1	1	N/A	1	1	1	1	1	Too much debris for accurate sump depth
	554-120	108	Pre-cast Concrete	1	4	1	1	1	1	1	1	1	1	1	Lid cracked
	554-121	N/A	Pre-cast Concrete	1	2	1	1	1	1	N/A	1	1	3	1	Concrete in good condition
12	554-122	N/A	Pre-cast Concrete	1	1	1	1	1	1	1	N/A	1	3	1	
	554-124	N/A	Pre-cast Concrete	2	2	1	1	1	1	1	3	1	2	1	
	554-127	65	Pre-cast Concrete	2	1	1	2	1	1	1	3	1	2	1	Chimney offset, 1"
13	554-128	N/A	Pre-cast Concrete	1	1	1	1	1	1	1	2	1	3	1	
	554-129	179	Pre-cast Concrete	2	1	1	N/A	1	N/A	1	1	1	3	1	Debris in sump, cut hole in barrel
14	554-156	179	Pre-cast Concrete	1	1	1	N/A	1	1	1	1	1	1	1	
	554-131	55	Pre-cast Concrete	3	1	1	3	5	N/A	2	N/A	1	1	1	5 grade rings, broken/missing ladder rungs
	554-132	60	Pre-cast Concrete	1	1	1	1	1	N/A	1	N/A	1	1	1	2 grade rings
	554-134	54	Pre-cast Concrete	1	2	1	2	N/A	N/A	1	N/A	1	1	1	3 grade rings
15	554-135	57	Pre-cast Concrete	1	1	1	2	1	N/A	1	N/A	1	1	1	3 grade rings
	554-136	54	Pre-cast Concrete	1	1	2	2	1	N/A	1	N/A	1	2	2	2 grade rings
	554-137	52	Pre-cast Concrete	1	1	1	1	1	N/A	1	N/A	1	1	1	2 grade rings
16	554-138	52	Pre-cast Concrete	1	1	1	2	1	N/A	1	N/A	1	1	1	3 grade rings, debris in sump
	554-139	49	Pre-cast Concrete	1	1	1	N/A	1	N/A	1	N/A	1	1	1	
	554-144	30	Pre-cast Concrete	3	1	3	N/A	N/A	N/A	N/A	N/A	3	4	3	Frame and base cracked

CR NHS STORM DRAIN INSPECTIONS

STORM DRAIN STRUCTURE INSPECTION REPORT

Catchbasin Manhole # **577-41**

Date, Inspector(s), & Location

Date of Inspection: Wednesday, November 7, 2018

Inspector(s): Miller

General Location: 4125 DEBARR RD

Pipe Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

	Diameter	Type	In-Effluent	Rim to Invert	Depth of Flow	Fill Depth	Connection Type	Grade Score
1	30"	CMP	Influent				Grouted	
2	12"	CMP	Influent				Grouted	
3	30"	CMP	Effluent				Grouted	

Structure Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

Overall Structural Condition:

Steps: 6, Metal, score 1

Depth of Sump:

Depth of Debris in Sump:

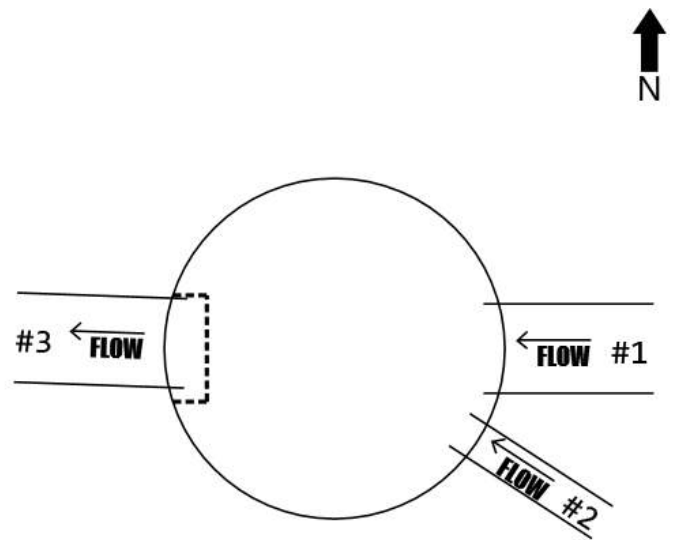
	Component	Material	Geometry	Grade Score	Dim A	Dim B	Height
1	Cover - Standard Cover	Metal	Round	1	22"		
2	Frame	Metal	Round	1			12"
3	Chimney	Precast Concrete	Round	2			12"
4	Reducing Slab	Precast Concrete	Round	1			6"
5	Barrel Section	Precast Concrete	Round				
6	Reducing Slab	Precast Concrete	Round				
7	Base	Precast Concrete	Round				

Primary Comments: 3 STEPS WEST, 3 STEPS SOUTH

Additional Comments: Partial Inspection 11/7/18



	PIPE ID
1	577-42 to 577-41
2	577-65 to 577-41
3	577-41 to



Line/Connection Comments:



577-41 Facing Southwest



Cover



North is up



North is up



Manhole interior, North is up

CR NHS STORM DRAIN INSPECTIONS

STORM DRAIN STRUCTURE INSPECTION REPORT

Catchbasin Manhole # **577-43**

Date, Inspector(s), & Location

Date of Inspection: Tuesday, November 6, 2018

Inspector(s): Miller

General Location: 4125 DEBARR RD

Pipe Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

	Diameter	Type	In-Effluent	Rim to Invert	Depth of Flow	Fill Depth	Connection Type	Grade Score
1	30"	CMP	Influent	106"			Grouted	2
2	12"	CMP	Influent	62"			Grouted	2
3	30"	CMP	Effluent	106"			Grouted	2

Structure Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

Overall Structural Condition: 1

Steps: 6, Metal, score 1

Depth of Sump:

Depth of Debris in Sump:

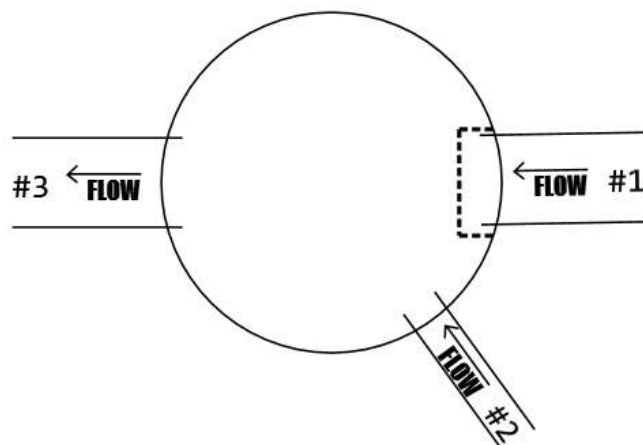
	Component	Material	Geometry	Grade Score	Dim A	Dim B	Height
1	Cover - Standard Cover	Metal	Round	1	22"		
2	Frame	Metal	Round	1			12"
3	Chimney	Precast Concrete	Round	2			3"
4	Cone	Precast Concrete	Round	1			29"
5	Reducing Slab	Precast Concrete	Round	1	72"		8"
6	Base	Precast Concrete	Round	1			68"

Primary Comments: 4 STEPS EAST, 2 NORTH; METAL LOSS IN MAINLINE INVERTS

Additional Comments: TOO MUCH DEBRIS FOR ACCURATE SUMP AND BASE DEPTH



	PIPE ID
1	577-44 to 577-43
2	577-60 to 577-43
3	577-43 to 577-42



Line/Connection Comments:

577-44 to 577-43

336.2' INSPECTED STOPPED BY DEBRIS, Zoomed to END 11/6/18

577-43 to 577-42

355.4' INSPECTED COMPLETE 11/6/18



577-43 Facing East



Effluent pipe connection



Chimney and Frame, West is up



Cover



West is up



West is up

CR NHS STORM DRAIN INSPECTIONS

STORM DRAIN STRUCTURE INSPECTION REPORT

Catchbasin Manhole # **385-29**

Date, Inspector(s), & Location

Date of Inspection: Tuesday, September 25, 2018

Inspector(s): Other

General Location: 939 PINE ST

Pipe Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

	Diameter	Type	In-Effluent	Rim to Invert	Depth of Flow	Fill Depth	Connection Type	Grade Score
1	18"	CMP	Influent	64"	0"		Grouted	2
2	18"	CMP	Effluent	67"	0"		Grouted	2
3	18"	CMP	Influent	19"	0"		Grouted	3

Structure Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

Overall Structural Condition: 2

Steps: N/A

Depth of Sump:

Depth of Debris in Sump:

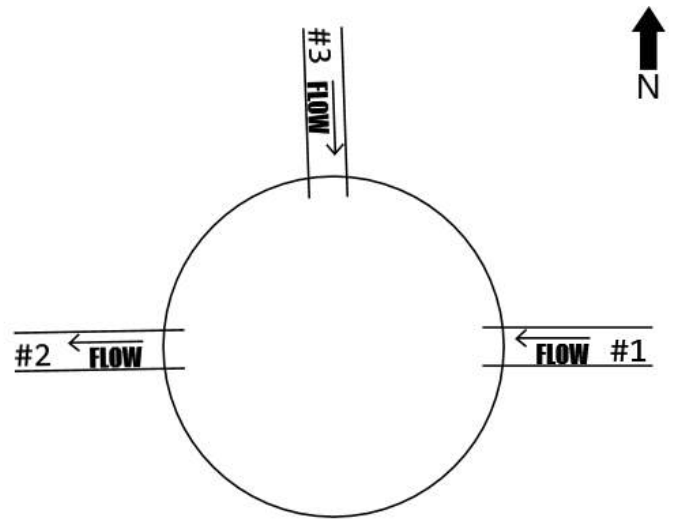
	Component	Material	Geometry	Grade Score	Dim A	Dim B	Height
1	Cover - Standard Cover	Metal	Rectangular	2	36"	18"	
2	Frame	Metal	Rectangular	2			5"
3	Reducing Slab	Precast Concrete	Round	1			8"
4	Barrel Section	Precast Concrete	Round	1			24"
5	Base	Precast Concrete	Round	2			35"

Primary Comments: Crack in base

Additional Comments:



	PIPE ID
1	385-30 to 385-29
2	385-29 to 385-28
3	385-36 to 385-29



Line/Connection Comments:

385-30 to 385-29

Inspection completed 128' 9/25/18

385-29 to 385-28

Inspection completed 64' 9/25/18

385-36 to 385-29

Inspection completed 9/25/18 19'



385-29 Facing West



385-29 Facing East



Northeast is up



Facing West



Crack in base



Frame and Chimney



North is up

CR NHS STORM DRAIN INSPECTIONS

STORM DRAIN STRUCTURE INSPECTION REPORT

Manhole # **385-32**

Date, Inspector(s), & Location

Date of Inspection: Tuesday, September 25, 2018

Inspector(s): Other

General Location: 939 PINE ST

Pipe Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

	Diameter	Type	In-Effluent	Rim to Invert	Depth of Flow	Fill Depth	Connection Type	Grade Score
1	18"	CMP	Influent	92"	0"		Grouted	1
2	12"	CMP	Influent	88"	0"		Grouted	1
3	18"	CMP	Effluent	94"			Grouted	1

Structure Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

Overall Structural Condition: 3

Steps: 5, Metal, score 1

Depth of Sump:

Depth of Debris in Sump:

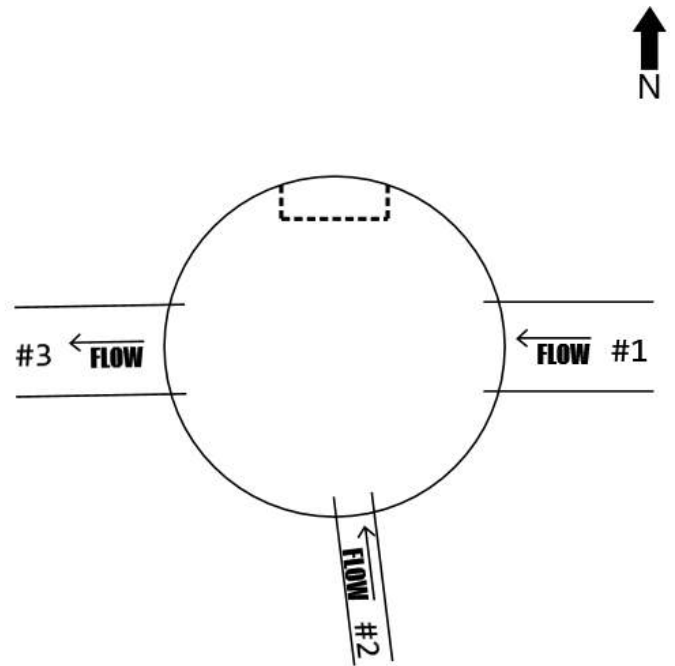
	Component	Material	Geometry	Grade Score	Dim A	Dim B	Height
1	Cover - Standard Cover	Metal	Round	2	22"		
2	Frame	Metal	Round	2			12"
3	Chimney	Precast Concrete	Round	4			2"
4	Cone	Precast Concrete	Round	2			27"
5	Barrel Section	Precast Concrete	Round	2			12"
6	Base	Precast Concrete	Round	2			21"

Primary Comments:

Additional Comments:



	PIPE ID
1	385-33 to 385-32
2	385-35 to 385-32
3	385-32 to 385-30



Line/Connection Comments:

385-33 to 385-32

Inspection completed 9/25/18 450 LF

385-32 to 385-30

Inspection completed 9/25/18 349'



385-32 North is up



South is up



385-32 Facing West



North is up



Frame and Chimney

CR NHS STORM DRAIN INSPECTIONS

STORM DRAIN STRUCTURE INSPECTION REPORT

Catch Basin # **554-460**

Date, Inspector(s), & Location

Date of Inspection: Thursday, July 12, 2018

Inspector(s): Stratton

General Location: 5800 BUCKNER DR

Pipe Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

	Diameter	Type	In-Effluent	Rim to Invert	Depth of Flow	Fill Depth	Connection Type	Grade Score
1	12"	CMP	Effluent	34"		10"	Grouted	1

Structure Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

Overall Structural Condition: 1

Steps: 0

Depth of Sump: 0"

Depth of Debris in Sump: 6" to 18"

	Component	Material	Geometry	Grade Score	Dim A	Dim B	Height
1	Cover - Standard Cover	Metal	Rectangular	1	36"	19"	
2	Frame	Metal	Rectangular	2			7"
3	Base	Precast Concrete	Rectangular	1			27"

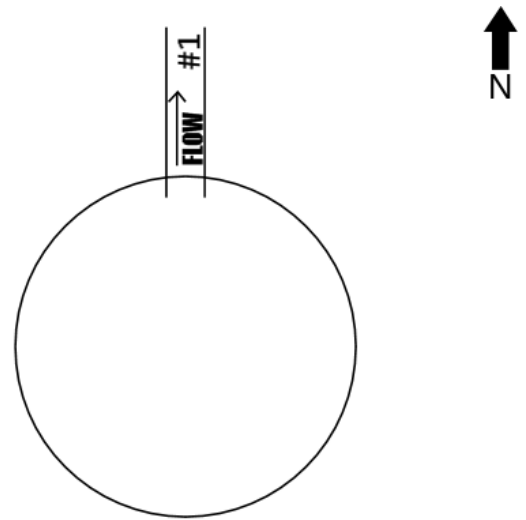
Primary Comments:

Additional Comments:



PIPE ID

1 554-460 to 554-459



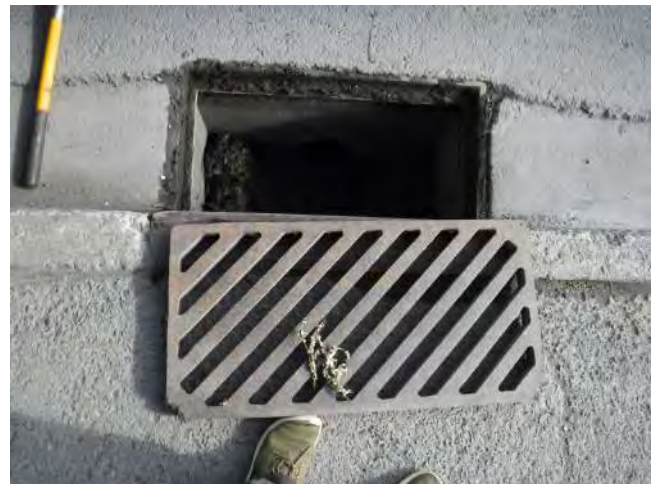
Line/Connection Comments:

554-460 to 554-459

Inspected 61.4 Complete 7/12/18



554-460 Facing East



North is up



Effluent pipe connection



Broken curb inlet

CR NHS STORM DRAIN INSPECTIONS

STORM DRAIN STRUCTURE INSPECTION REPORT

Catch Basin # **554-461**

Date, Inspector(s), & Location

Date of Inspection: Thursday, July 12, 2018

Inspector(s): Stratton

General Location: 1300 NUNAKA DR

Pipe Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

	Diameter	Type	In-Effluent	Rim to Invert	Depth of Flow	Fill Depth	Connection Type	Grade Score
1	12"	CMP	Effluent	34"			Grouted	1

Structure Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

Overall Structural Condition: 1

Steps: 0

Depth of Sump: 0"

Depth of Debris in Sump: 0" to 6"

	Component	Material	Geometry	Grade Score	Dim A	Dim B	Height
1	Cover - Standard Cover	Metal	Rectangular	1	36"	18"	
2	Frame	Metal	Rectangular	1	37"	19"	7"
3	Base	Precast Concrete	Rectangular	1			27"

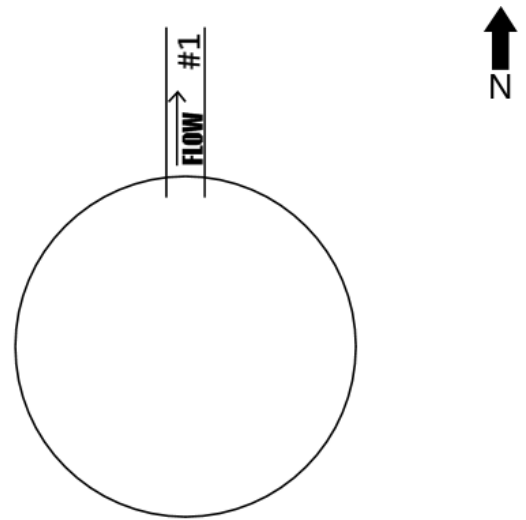
Primary Comments:

Additional Comments:



PIPE ID

1 554-461 to 554-457



Line/Connection Comments:

554-461 to 554-457

Inspected 64.3' Complete 7/12/18



554-461 Facing East



Cover and Frame



Effluent pipe connection

CR NHS STORM DRAIN INSPECTIONS

STORM DRAIN STRUCTURE INSPECTION REPORT

Catch Basin # **554-462**

Date, Inspector(s), & Location

Date of Inspection: Thursday, July 12, 2018

Inspector(s): Stratton

General Location: 6006 DEBARR RD

Pipe Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

	Diameter	Type	In-Effluent	Rim to Invert	Depth of Flow	Fill Depth	Connection Type	Grade Score
1	12"	CMP	Effluent	34"	3"		Grouted	2
2	12"	CMP	Influent	34"	3"		Grouted	1

Structure Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

Overall Structural Condition: 1

Steps: 0

Depth of Sump: 0"

Depth of Debris in Sump: 0" to 6"

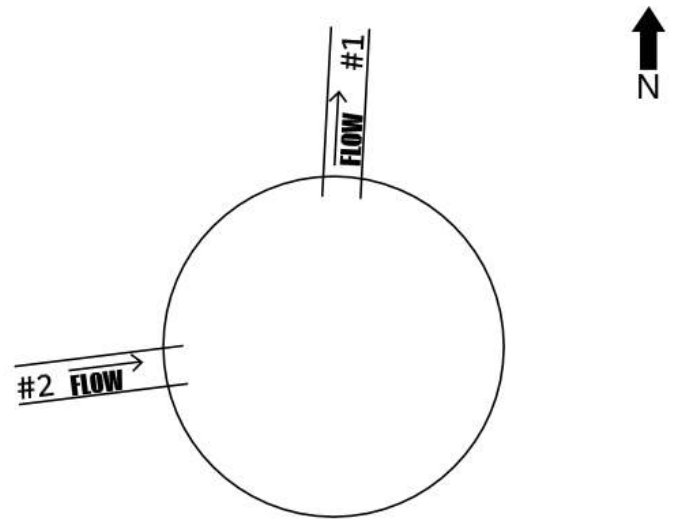
	Component	Material	Geometry	Grade Score	Dim A	Dim B	Height
1	Cover - Standard Cover	Metal	Rectangular	1	36"	18"	
2	Frame	Metal	Rectangular	1	37"	19"	7"
3	Base	Precast Concrete	Rectangular	1			27"

Primary Comments:

Additional Comments:



	PIPE ID
1	554-462 to 554-455
2	554-463 to 554-462



Line/Connection Comments:

554-463 to 554-462

Inspected 111.1' Complete 7/12/18



554-462 Facing West



North is up



West is up



CR NHS STORM DRAIN INSPECTIONS

STORM DRAIN STRUCTURE INSPECTION REPORT

Catchbasin Manhole # **554-450**

Date, Inspector(s), & Location

Date of Inspection: Thursday, September 6, 2018

Inspector(s): Stratton

General Location: 6307 DEBARR RD

Pipe Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

	Diameter	Type	In-Effluent	Rim to Invert	Depth of Flow	Fill Depth	Connection Type	Grade Score
1	12"	CMP	Influent	78"	0"	1"	Grouted	1
2	12"	PCMP	Effluent	78"	0"	1"	Grouted	1

Structure Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

Overall Structural Condition: 1

Steps: 3, Metal, score 1

Depth of Sump: 0"

Depth of Debris in Sump: 0" to 6"

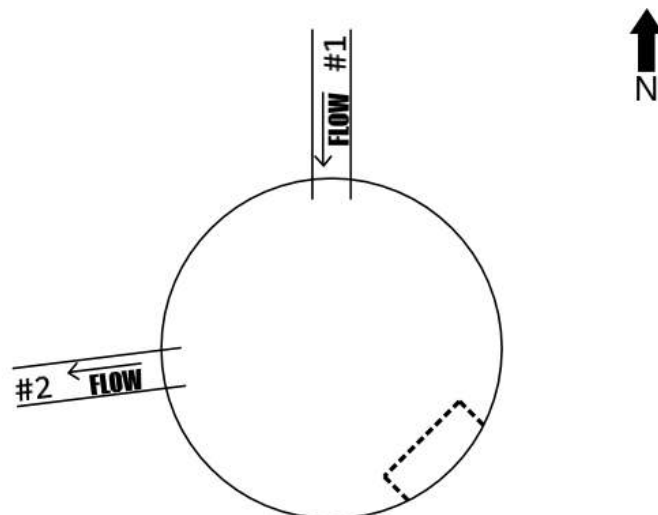
	Component	Material	Geometry	Grade Score	Dim A	Dim B	Height
1	Cover - Standard Cover	Metal	Round	1	25"		
2	Frame	Metal	Round	1	26"		6"
3	Chimney	Precast Concrete	Round	1			6"
4	Reducing Slab	Precast Concrete	Round	1			6"
5	Barrel Section	Precast Concrete	Round	1	48"		36"
6	Base	Precast Concrete	Round	1	48"		24"

Primary Comments: INSPECTION COMPLETED TOO MUCH DEBRIS FOR ACCURATE SUMP DEPTH

Additional Comments:



	PIPE ID
1	554-451 to 554-450
2	554-450 to 554-449



Line/Connection Comments:

554-450 to 554-449

UNABLE TO INSPECT DUE TO DEBRIS CCTV STOPPED AT 20.6 FEET 9/6/18



554-450 Facing Southwest



Manhole Interior

CR NHS STORM DRAIN INSPECTIONS

STORM DRAIN STRUCTURE INSPECTION REPORT

Manhole # **554-120**

Date, Inspector(s), & Location

Date of Inspection: Thursday, July 19, 2018

Inspector(s): Miller

General Location: 6370 DEBARR RD

Pipe Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

	Diameter	Type	In-Effluent	Rim to Invert	Depth of Flow	Fill Depth	Connection Type	Grade Score
1	36"	CMP	Influent	104"	3"		Grouted	1
2	12"	CMP	Influent	45"	0"		Grouted	1
3	36"	CMP	Effluent	108"	4"		Grouted	1
4	12"	CMP	Influent	72"	0"		Grouted	1

Structure Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

Overall Structural Condition: 1

Steps: 6, Metal, score 1

Depth of Sump:

Depth of Debris in Sump: 6" to 18"

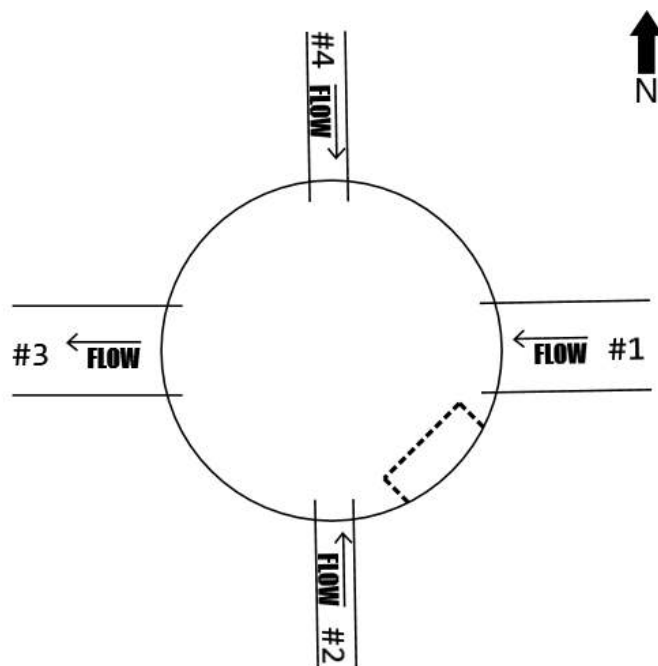
	Component	Material	Geometry	Grade Score	Dim A	Dim B	Height
1	Cover - Standard Cover	Metal	Round	4	25"		
2	Frame	Metal	Round	1			6"
3	Chimney	Precast Concrete	Round	1			4"
4	Cone	Precast Concrete	Eccentric	1			45"
5	Barrel Section	Precast Concrete	Round	1			42"
6	Reducing Slab	Precast Concrete	Round	1			4"
7	Base	Precast Concrete	Round	1			52"

Primary Comments: LID CRACKED

Additional Comments:



	PIPE ID
1	554-121 to 554-120
2	554-448 to 554-120
3	554-120 to 554-119
4	554-447 to 554-120



Line/Connection Comments:

554-121 to 554-120

Inspected 491.4' Complete 7/13/18

554-448 to 554-120

Inspected 5.3' Complete 7/12/18

554-120 to 554-119

Inspected 220' Complete 7/13/18

554-447 to 554-120

Inspected 29' 7/12/18 Unable to complete due to debris INSPECTED 54.9' COMPLETE 7/19/18 POST CLEANING



North influent pipe connection



North is up



Influent mainline connection



Effluent mainline connection



South influent pipe connection



Patchwork done to barrel section



564-120 Facing North



Cracked Lid

CR NHS STORM DRAIN INSPECTIONS

STORM DRAIN STRUCTURE INSPECTION REPORT

Manhole # **554-121**

Date, Inspector(s), & Location

Date of Inspection: Thursday, July 19, 2018

Inspector(s): Miller

General Location: 1301 SUMMIT VIEW ST

Pipe Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

	Diameter	Type	In-Effluent	Rim to Invert	Depth of Flow	Fill Depth	Connection Type	Grade Score
1	12"	CMP	Influent				Grouted	3
2	36"	CMP	Influent				Grouted	1
3	12"	CMP	Influent				Grouted	1
4	36"	CMP	Effluent				Grouted	1

Structure Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

Overall Structural Condition: 1

Steps: 5, Metal, score 1

Depth of Sump:

Depth of Debris in Sump:

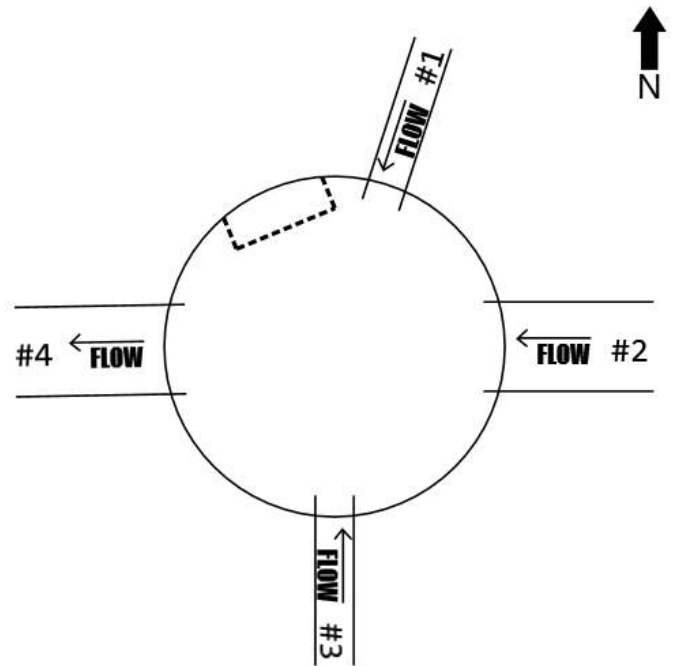
	Component	Material	Geometry	Grade Score	Dim A	Dim B	Height
1	Cover - Standard Cover	Metal	Round	2	25"		
2	Frame	Metal	Round	1			7"
3	Chimney	Precast Concrete	Round	1			
4	Cone	Precast Concrete	Round	1			
5	Barrel Section	Precast Concrete	Round	1			
6	Base	Precast Concrete	Round	1			

Primary Comments: CONCRETE IN GOOD CONDITION

Additional Comments:



	PIPE ID
1	554-446 to 554-121
2	554-122 to 554-121
3	554-445 to 554-121
4	554-121 to 554-120



Line/Connection Comments:

554-446 to 554-121

59' INSPECTED COMPLETE 7/19/18

554-122 to 554-121

Inspected 308.3' Complete 7/13/18

554-121 to 554-120

Inspected 491.4' Complete 7/13/18



554-121 Facing North



Cover



Frame, North is up



North is up



554-445 to 554-121

CR NHS STORM DRAIN INSPECTIONS

STORM DRAIN STRUCTURE INSPECTION REPORT

Manhole # **554-122**

Date, Inspector(s), & Location

Date of Inspection: Thursday, July 19, 2018

Inspector(s): Miller

General Location: 6601 MINK AVE

Pipe Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

	Diameter	Type	In-Effluent	Rim to Invert	Depth of Flow	Fill Depth	Connection Type	Grade Score
1	36"	CMP	Influent				Grouted	1
2	12"	CMP	Influent				Grouted	3
3	36"	CMP	Effluent				Grouted	1
4	12"	CMP	Influent				Grouted	2

Structure Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

Overall Structural Condition: 1

Steps: 5, Metal, score 1

Depth of Sump: 3"

Depth of Debris in Sump: 0" to 6"

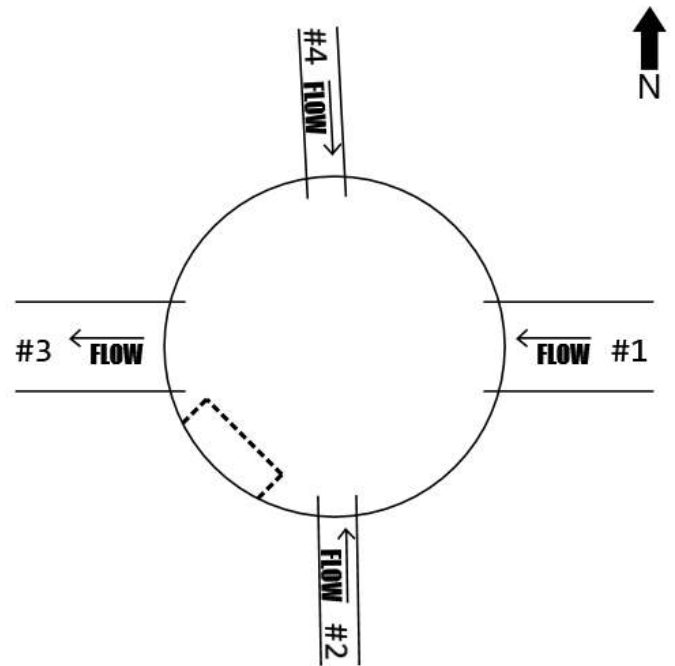
	Component	Material	Geometry	Grade Score	Dim A	Dim B	Height
1	Cover - Standard Cover	Metal	Round	1	25"		
2	Frame	Metal	Round	1			6"
3	Chimney	Precast Concrete	Round	1			11"
4	Cone	Precast Concrete	Round	1			26"
5	Reducing Slab	Precast Concrete	Round	1			5"
6	Base	Precast Concrete	Round	1			50"

Primary Comments:

Additional Comments:



	PIPE ID
1	554-123 to 554-122
2	554-444 to 554-122
3	554-122 to 554-121
4	554-443 to 554-122



Line/Connection Comments:

554-123 to 554-122

Inspected 297.5' Complete 7/13/18

554-122 to 554-121

Inspected 308.3' Complete 7/13/18

554-443 to 554-122

55' INSPECTED COMPLETED 7/19/18



554-122 Facing North



554-444 to 554-122



Cover



North is up



North is up

CR NHS STORM DRAIN INSPECTIONS

STORM DRAIN STRUCTURE INSPECTION REPORT

Manhole # **554-124**

Date, Inspector(s), & Location

Date of Inspection: Thursday, July 19, 2018

Inspector(s): Miller

General Location: 1319 TURPIN ST

Pipe Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

	Diameter	Type	In-Effluent	Rim to Invert	Depth of Flow	Fill Depth	Connection Type	Grade Score
1	36"	CMP	Influent				Grouted	1
2	12"	CMP	Influent				Grouted	2
3	36"	CMP	Effluent				Grouted	1
4	12"	CMP	Influent				Grouted	2

Structure Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

Overall Structural Condition: 2

Steps: 8, Metal, score 1

Depth of Sump:

Depth of Debris in Sump:

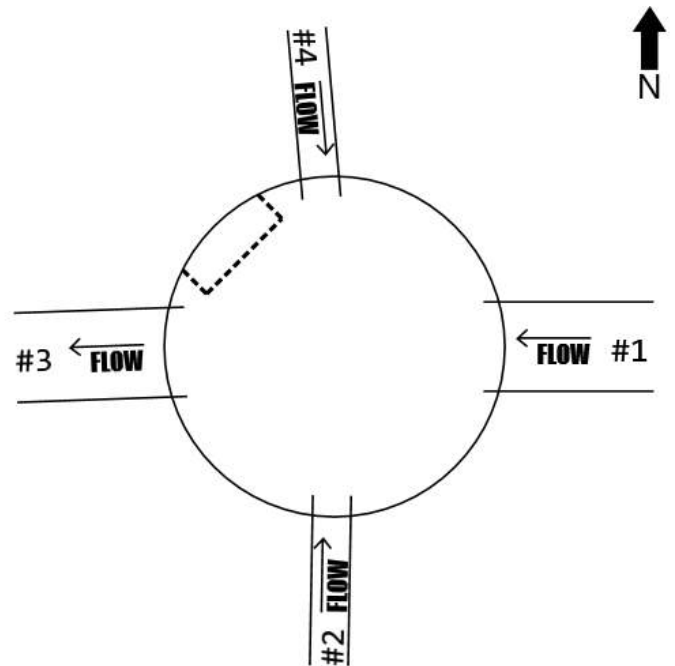
	Component	Material	Geometry	Grade Score	Dim A	Dim B	Height
1	Cover - Standard Cover	Metal	Round	2	25"		
2	Frame	Metal	Round	1			7"
3	Chimney	Precast Concrete	Round	1			5"
4	Cone	Precast Concrete	Round	1			32"
5	Barrel Section	Precast Concrete	Round	3			24"
6	Reducing Slab	Precast Concrete	Round	1			5"
7	Base	Precast Concrete	Round	1			50"

Primary Comments:

Additional Comments:



	PIPE ID
1	554-127 to 554-124
2	554-126 to 554-124
3	554-124 to 554-123
4	554-125 to 554-124



Line/Connection Comments:

554-127 to 554-124

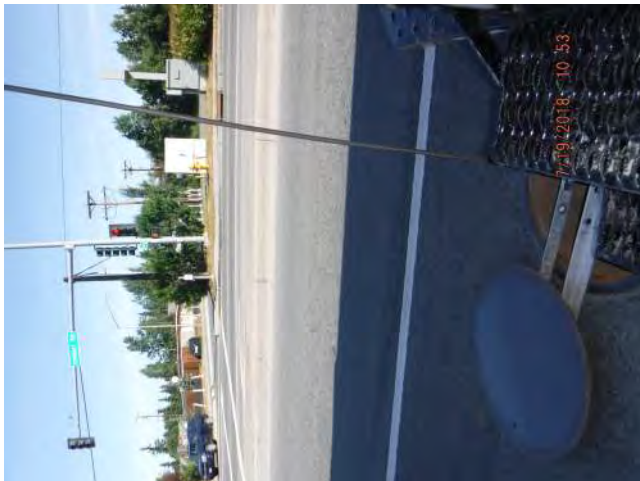
Inspected 324.5' Complete 7/13/18

554-124 to 554-123

Inspected 54.8' Complete 7/13/18

554-125 to 554-124

34.6' inspected 7/19/18, pipe full of debris PIPE CLEANED, INSPECTED 54.9' COMPLETE 7/19/18



554-124 Facing North



Cover



North is up



North is up



554-126 to 554-124

CR NHS STORM DRAIN INSPECTIONS

STORM DRAIN STRUCTURE INSPECTION REPORT

Manhole # **554-127**

Date, Inspector(s), & Location

Date of Inspection: Thursday, July 19, 2018

Inspector(s): Miller

General Location: 6801 MINK AVE

Pipe Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

	Diameter	Type	In-Effluent	Rim to Invert	Depth of Flow	Fill Depth	Connection Type	Grade Score
1	36"	CMP	Influent				Grouted	1
2	12"	CMP	Influent				Grouted	2
3	36"	CMP	Effluent				Grouted	1
4	12"	CMP	Influent	65"			Grouted	1

Structure Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

Overall Structural Condition: 2

Steps: 11, Metal, score 1

Depth of Sump:

Depth of Debris in Sump:

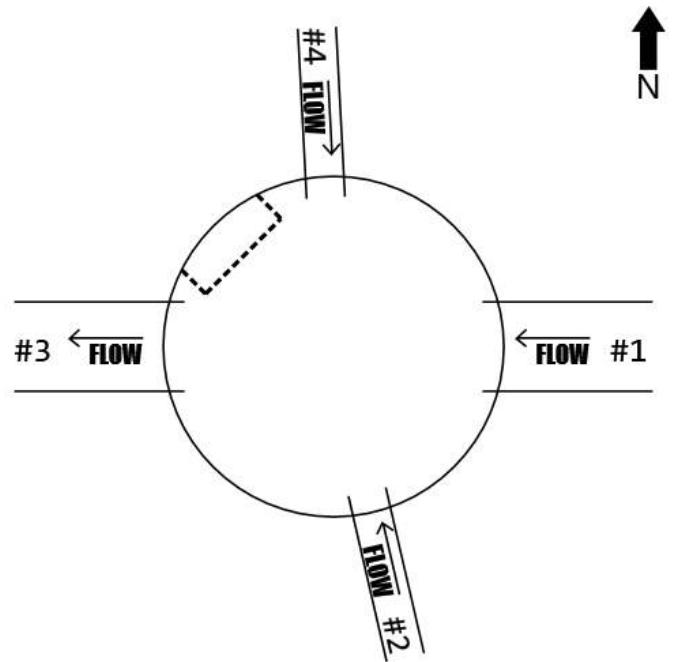
	Component	Material	Geometry	Grade Score	Dim A	Dim B	Height
1	Cover - Standard Cover	Metal	Round	1	25"		
2	Frame	Metal	Round	1			6"
3	Chimney	Precast Concrete	Round	2			6"
4	Cone	Precast Concrete	Round	1			25"
5	Barrel Section	Precast Concrete	Round	1			23"
6	Barrel Section	Precast Concrete	Round	3			48"
7	Reducing Slab	Precast Concrete	Round	1			6"
8	Base	Precast Concrete	Round	1			50"

Primary Comments: chimney offset 1"

Additional Comments:



	PIPE ID
1	554-128 to 554-127
2	554-311 to 554-127
3	554-127 to 554-124
4	554-312 to 554-127



Line/Connection Comments:

554-128 to 554-127

Inspected 319.6' Complete 7/13/18

554-127 to 554-124

Inspected 324.5' Complete 7/13/18

554-312 to 554-127

55' INSPECTED COMPLETE 7/19/18



574-127 Facing Northeast



Repair to barrel section



Repair to barrel section



Cover



Frame, North is up



North is up



Chimney



554-311 to 554-127

CR NHS STORM DRAIN INSPECTIONS

STORM DRAIN STRUCTURE INSPECTION REPORT

Manhole # **554-128**

Date, Inspector(s), & Location

Date of Inspection: Thursday, July 19, 2018

Inspector(s): Miller

General Location: 1319 MARTEN ST

Pipe Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

	Diameter	Type	In-Effluent	Rim to Invert	Depth of Flow	Fill Depth	Connection Type	Grade Score
1	36"	CMP	Influent				Grouted	1
2	12"	CMP	Influent				Grouted	3
3	36"	CMP	Effluent				Grouted	1
4	12"	CMP	Influent				Grouted	1

Structure Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

Overall Structural Condition: 1

Steps: 12, Metal, score 1

Depth of Sump:

Depth of Debris in Sump:

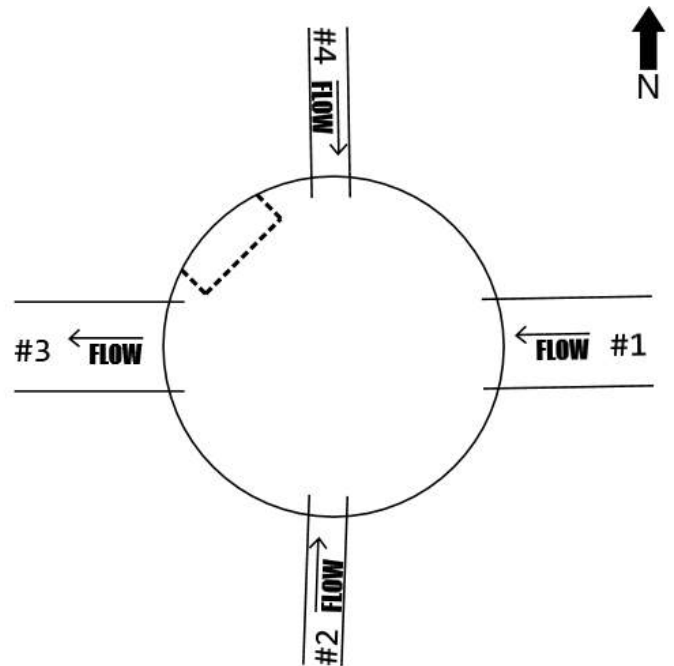
	Component	Material	Geometry	Grade Score	Dim A	Dim B	Height
1	Cover - Standard Cover	Metal	Round	1	25"		
2	Frame	Metal	Round	1			6"
3	Chimney	Precast Concrete	Round	1			2"
4	Cone	Precast Concrete	Round	1			28"
5	Barrel Section	Precast Concrete	Round	1			50"
6	Barrel Section	Precast Concrete	Round	2			36"
7	Reducing Slab	Precast Concrete	Round	1			6"
8	Base	Precast Concrete	Round	1			50"

Primary Comments:

Additional Comments:



	PIPE ID
1	554-129 to 554-128
2	554-310 to 554-128
3	554-128 to 554-127
4	554-309 to 554-128



Line/Connection Comments:

554-129 to 554-128

299.2' INSPECTED COMPLETE 7/16/18 Repeat Footage 300.3' Inspected 7/13/18

554-128 to 554-127

Inspected 319.6' Complete 7/13/18

554-309 to 554-128

55.6' INSPECTED COMPLETE 7/19/18



554-128 Facing North



North is up



554-310 to 554-128



Repair to barrel section



Cover



Frame, North is up

CR NHS STORM DRAIN INSPECTIONS

STORM DRAIN STRUCTURE INSPECTION REPORT

Manhole # **554-129**

Date, Inspector(s), & Location

Date of Inspection: Monday, July 16, 2018

Inspector(s): Miller

General Location: 7003 MINK AVE

Pipe Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

	Diameter	Type	In-Effluent	Rim to Invert	Depth of Flow	Fill Depth	Connection Type	Grade Score
1	36"	CMP	Influent	179"	3"	1"	Grouted	1
2	12"	CMP	Influent	40"	0"		Grouted	3
3	36"	CMP	Effluent	179"	3"	1"	Grouted	1
4	12"	CMP	Influent	67"	0"		Grouted	1

Structure Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

Overall Structural Condition: 2

Steps: 13, Metal, score 1

Depth of Sump: 2"

Depth of Debris in Sump: 0" to 6"

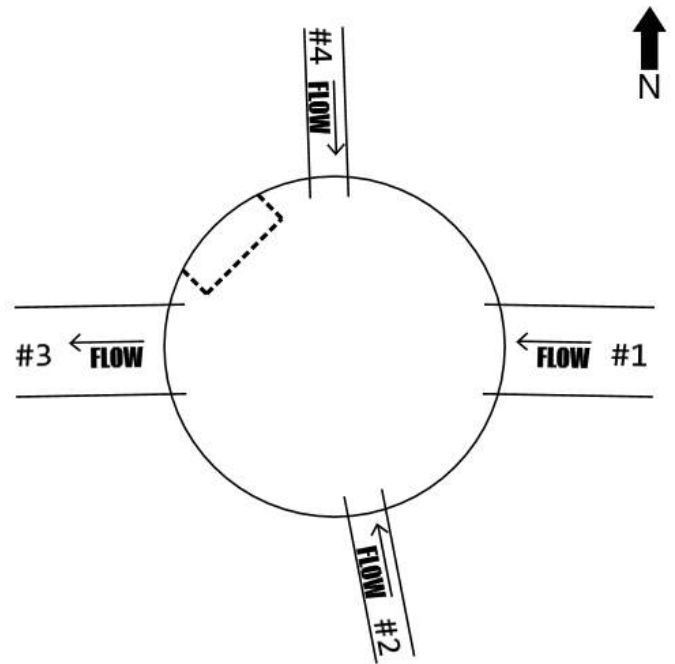
	Component	Material	Geometry	Grade Score	Dim A	Dim B	Height
1	Cover - Standard Cover	Metal	Round	1	25"		
2	Frame	Metal	Round	1			6"
3	Reducing Slab	Precast Concrete	Round	1			8"
4	Barrel Section	Precast Concrete	Round	1			25"
5	Barrel Section	Precast Concrete	Round	1			48"
6	Barrel Section	Precast Concrete	Round	1			48"
7	Reducing Slab	Precast Concrete	Round	1			6"
8	Base	Precast Concrete	Round	1			40"

Primary Comments: DEBRIS IN SUMP, CUT HOLE IN BARRELL

Additional Comments: MAINLINES PROBED METAL LOSS PRESENT



	PIPE ID
1	554-130 to 554-129
2	554-308 to 554-129
3	554-129 to 554-128
4	554-307 to 554-129



Line/Connection Comments:

554-130 to 554-129

300.8' INSPECTED COMPLETE 7/16/18

554-129 to 554-128

299.2' INSPECTED COMPLETE 7/16/18 Repeat Footage 300.3' Inspected 7/13/18

554-307 to 554-129

53.3' INSPECTED COMPLETE 7/19/18



554-129 Facing East



Cover



554-308 to 554-129



Patch repair to barrel



Damage to 554-308 to 554-129 downstream connection

CR NHS STORM DRAIN INSPECTIONS

STORM DRAIN STRUCTURE INSPECTION REPORT

Catchbasin Manhole # **554-156**

Date, Inspector(s), & Location

Date of Inspection: Thursday, September 6, 2018

Inspector(s): Stratton

General Location: 7041 DEBARR RD

Pipe Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

	Diameter	Type	In-Effluent	Rim to Invert	Depth of Flow	Fill Depth	Connection Type	Grade Score
1	24"	HDPE	Influent	179"			Grouted	1
2	36"	CMP	Effluent	179"	1"	0"	Grouted	1
3	36"	CMP	Influent	179"	1"	0"	Grouted	1

Structure Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

Overall Structural Condition: 1

Steps: 12, Metal, score 1

Depth of Sump: 5"

Depth of Debris in Sump: 0" to 6"

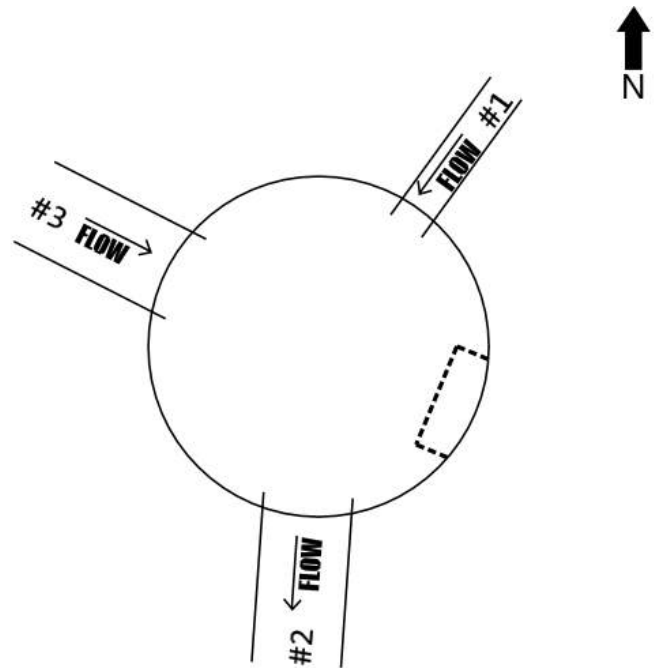
	Component	Material	Geometry	Grade Score	Dim A	Dim B	Height
1	Cover - Standard Cover	Metal	Round	1	25"		
2	Frame	Metal	Round	1	26"		10"
3	Cone	Precast Concrete	Round	1	48"		54"
4	Barrel Section	Precast Concrete	Round	1	48"		50"
5	Reducing Slab	Precast Concrete	Round	1	48"		7"
6	Base	Precast Concrete	Round	1	72"		68"

Primary Comments:

Additional Comments:



	PIPE ID
1	554-156a to 554-156
2	554-156 to 554-130
3	554-157 to 554-156



Line/Connection Comments:

554-156a to 554-156

New Pipe

554-156 to 554-130

Pipe 23" by 36" inspection completed 9/6/18 66.6ft

554-157 to 554-156

Inspected 6.0' Complete 9/6/18



554-156 Facing West



Cover



Manhole Interior



Pipe #1 Connection



Pipe #3 Connection



Pipe #2 Connection



Manhole Interior



Interior of Pipe #2, CPEP, no defects visible from MH

CR NHS STORM DRAIN INSPECTIONS

STORM DRAIN STRUCTURE INSPECTION REPORT

Manhole # **554-131**

Date, Inspector(s), & Location

Date of Inspection: Monday, July 16, 2018

Inspector(s): Miller

General Location: 1301 PATTERSON ST

Pipe Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

	Diameter	Type	In-Effluent	Rim to Invert	Depth of Flow	Fill Depth	Connection Type	Grade Score
1	24"	CMP	Influent	55"			Grouted	1
2	12"	CMP	Influent	47"	0"	3"	Grouted	1
3	24"	CMP	Effluent	55"			Grouted	1
4	12"	CMP	Influent	45"	0"	0"	Grouted	1

Structure Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

Overall Structural Condition: 3

Steps: 2, score 5

Depth of Sump: 6"

Depth of Debris in Sump: 0" to 6"

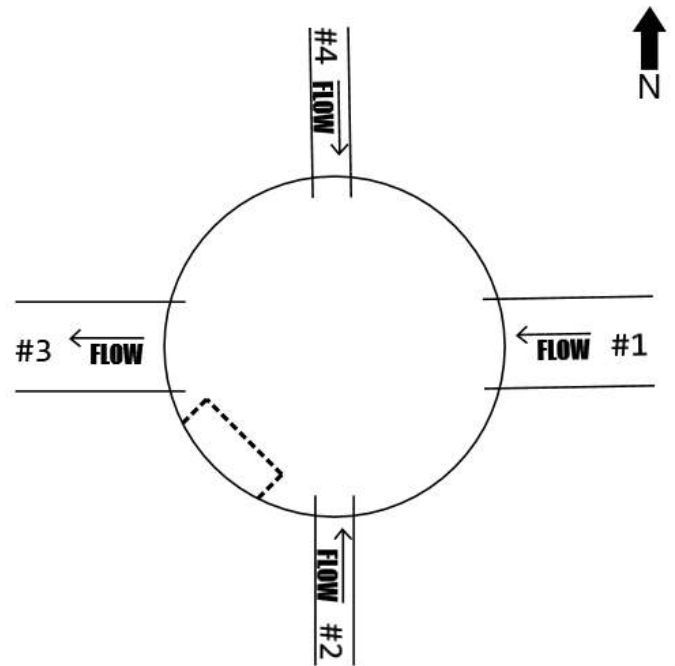
	Component	Material	Geometry	Grade Score	Dim A	Dim B	Height
1	Cover - Standard Cover	Metal	Round	1	25"		
2	Frame	Metal	Round	1			2"
3	Chimney	Precast Concrete	Round	3			20"
4	Reducing Slab	Precast Concrete	Round	2			6"
5	Base	Precast Concrete	Round	1			32"

Primary Comments: 5 GRADE RINGS 4 2 2 6 6

Additional Comments: BROKEN/MISSING RUNGS



	PIPE ID
1	554-131A to 554-131
2	554-155 to 554-131
3	554-131 to 554-130
4	554-154 to 554-131



Line/Connection Comments:

554-131A to 554-131

134.4' INSPECTED COMPLETE 7/16/18

554-155 to 554-131

PIPE NEARLY HALF FULL OF DEBRIS

554-131 to 554-130

56.7' INSPECTED COMPLETE

554-154 to 554-131

PIPE APPEARS ABANDONED 54.4' INSPECTED COMPLETE 7/19/18



554-131 Facing North



Broken Ladder Rung



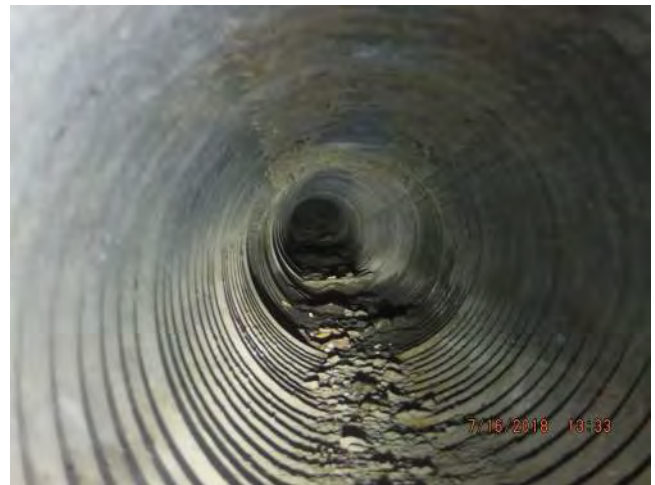
Cover



North is up



Chimneys, North is up



554-154 to 554-131, Upstream end abandoned



554-155 to 554-131

CR NHS STORM DRAIN INSPECTIONS

STORM DRAIN STRUCTURE INSPECTION REPORT

Manhole # **554-132**

Date, Inspector(s), & Location

Date of Inspection: Monday, July 16, 2018

Inspector(s): Miller

General Location: 7440 CREEKSIDE CENTER DR

Pipe Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

	Diameter	Type	In-Effluent	Rim to Invert	Depth of Flow	Fill Depth	Connection Type	Grade Score
1	24"	CMP	Influent	60"	1"		Grouted	1
2	18"	CMP	Influent	60"			Grouted	1
3	24"	CMP	Effluent	60"			Grouted	1

Structure Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

Overall Structural Condition: 1

Steps: 2, Metal, score 1

Depth of Sump: 4"

Depth of Debris in Sump: 0" to 6"

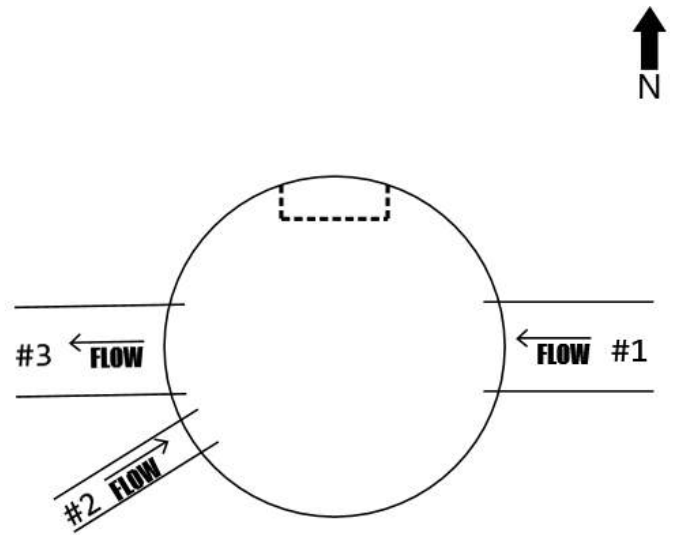
	Component	Material	Geometry	Grade Score	Dim A	Dim B	Height
1	Cover - Standard Cover	Metal	Round	1	25"		
2	Frame	Metal	Round	1			7"
3	Chimney	Precast Concrete	Round	1			9"
4	Reducing Slab	Precast Concrete	Round	1			7"
5	Base	Precast Concrete	Round	1			40"

Primary Comments: TWO GRADE RINGS

Additional Comments:



	PIPE ID
1	554-134 to 554-132
2	554-133 to 554-132
3	554-132 to 554-131A



Line/Connection Comments:

554-134 to 554-132

142' INSPECTED COMPLETE 7/16/18

554-133 to 554-132

PIPE ABANDONED

554-132 to 554-131A

160' INSPECTED COMPLETE 7/16/18



554-132 Facing Northeast



Cover



North is up



Steps and interior, north is up



Pipe connections, south is up



554-133 to 154-132, Pipe appears abandoned

CR NHS STORM DRAIN INSPECTIONS

STORM DRAIN STRUCTURE INSPECTION REPORT

Manhole # **554-134**

Date, Inspector(s), & Location

Date of Inspection: Thursday, July 19, 2018

Inspector(s): Miller

General Location: 7440 CREEKSIDE CENTER DR

Pipe Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

	Diameter	Type	In-Effluent	Rim to Invert	Depth of Flow	Fill Depth	Connection Type	Grade Score
1	12"	CMP	Influent	48"			Grouted	1
2	24"	CMP	Influent	54"			Grouted	1
3	12"	CMP	Influent	48"			Grouted	1
4	24"	CMP	Effluent	54"	1"	1"	Grouted	1

Structure Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

Overall Structural Condition: 1

Steps: 0

Depth of Sump: 7"

Depth of Debris in Sump: 0" to 6"

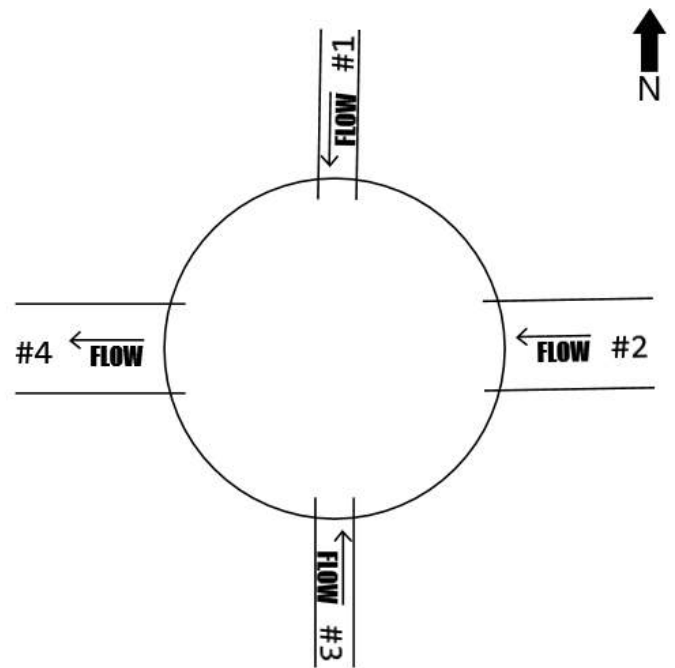
	Component	Material	Geometry	Grade Score	Dim A	Dim B	Height
1	Cover - Standard Cover	Metal	Round	2	25"		
2	Frame	Metal	Round	1			6"
3	Chimney	Precast Concrete	Round	2			15"
4	Reducing Slab	Precast Concrete	Round	1			8"
5	Base	Precast Concrete	Round	1			30"

Primary Comments: 3 GRADE RINGS 3" 6" 6"

Additional Comments:



	PIPE ID
1	554-153 to 554-134
2	554-135 to 554-134
3	554-152 to 554-134
4	554-134 to 554-132



Line/Connection Comments:

554-153 to 554-134

48.7' INSPECTED COMPLETE 7/19/18

554-135 to 554-134

313.8' INSPECTED COMPLETE 7/16/18

554-134 to 554-132

142' INSPECTED COMPLETE 7/16/18



554-134 Facing North



Cover



Frame and Chimney, North is up



Broken Ladder Rung, North is up



554-152 to 554-134

CR NHS STORM DRAIN INSPECTIONS

STORM DRAIN STRUCTURE INSPECTION REPORT

Manhole # **554-135**

Date, Inspector(s), & Location

Date of Inspection: Monday, July 16, 2018

Inspector(s): Miller

General Location: 7440 CREEKSIDE CENTER DR

Pipe Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

	Diameter	Type	In-Effluent	Rim to Invert	Depth of Flow	Fill Depth	Connection Type	Grade Score
1	12"	CMP	Influent	41"			Grouted	1
2	24"	CMP	Influent	57"			Grouted	1
3	12"	CMP	Influent	41"			Grouted	1
4	24"	CMP	Effluent	57"			Grouted	1

Structure Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

Overall Structural Condition: 1

Steps: 2, Metal, score 1

Depth of Sump: 3"

Depth of Debris in Sump: 0" to 6"

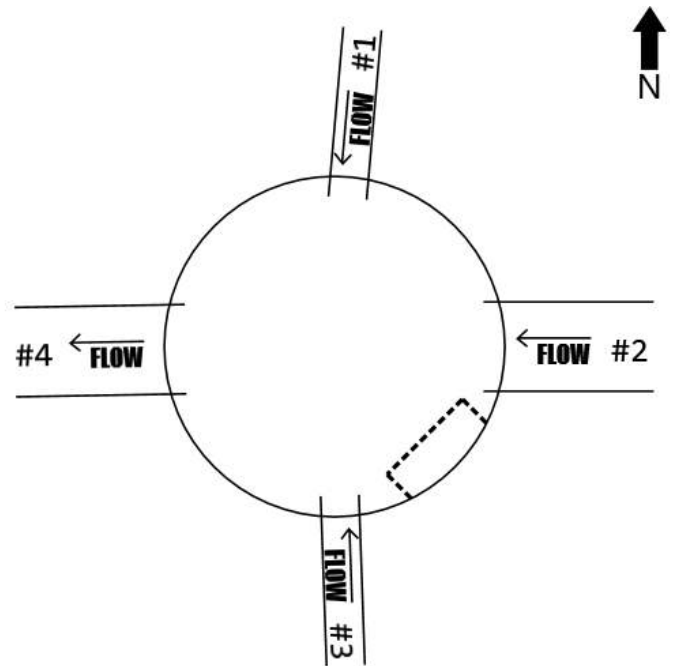
	Component	Material	Geometry	Grade Score	Dim A	Dim B	Height
1	Cover - Standard Cover	Metal	Round	1	25"		
2	Frame	Metal	Round	1			6"
3	Chimney	Precast Concrete	Round	2			16"
4	Reducing Slab	Precast Concrete	Round	1			10"
5	Base	Precast Concrete	Round	1			31"

Primary Comments: 3 GRADE RINGS, 3" 7" 6"

Additional Comments:



	PIPE ID
1	554-150 to 554-135
2	554-136 to 554-135
3	554-151 to 554-135
4	554-135 to 554-134



Line/Connection Comments:

554-150 to 554-135

55.3' INSPECTED COMPLETE 7/17/18

554-136 to 554-135

340.6' INSPECTED COMPLETE 7/16/18

554-135 to 554-134

313.8' INSPECTED COMPLETE 7/16/18



554-135 Facing North



Cover



Frame, North is up



Northeast is up



554-151 to 554-135

CR NHS STORM DRAIN INSPECTIONS

STORM DRAIN STRUCTURE INSPECTION REPORT

Manhole # **554-136**

Date, Inspector(s), & Location

Date of Inspection: Tuesday, July 17, 2018

Inspector(s): Miller

General Location: 7440 CREEKSIDE CENTER DR

Pipe Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

	Diameter	Type	In-Effluent	Rim to Invert	Depth of Flow	Fill Depth	Connection Type	Grade Score
1	12"	CMP	Influent	46"			Grouted	1
2	24"	CMP	Influent	54"			Grouted	2
3	12"	CMP	Influent	48"			Grouted	1
4	24"	CMP	Effluent	54"			Grouted	2

Structure Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

Overall Structural Condition: 1

Steps: 3, Metal, score 1

Depth of Sump: 12"

Depth of Debris in Sump: 0" to 6"

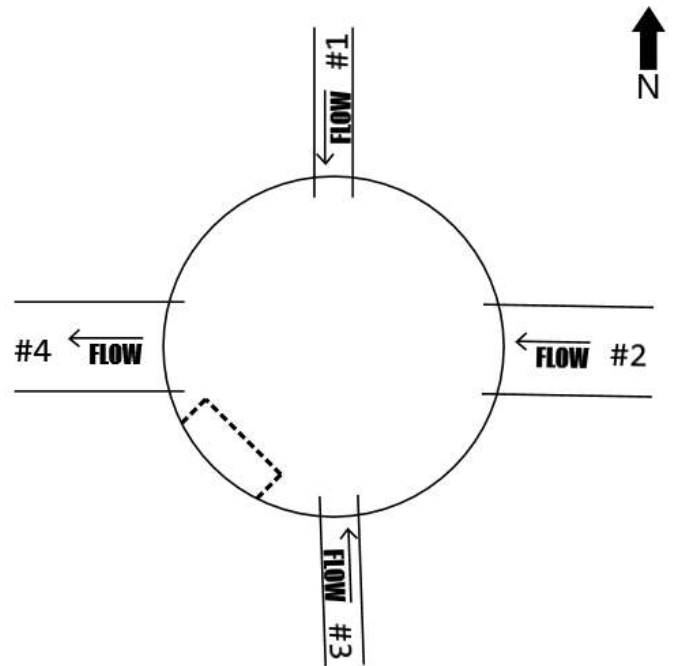
	Component	Material	Geometry	Grade Score	Dim A	Dim B	Height
1	Cover - Standard Cover	Metal	Round	1	25"		
2	Frame	Metal	Round	2			5"
3	Chimney	Precast Concrete	Round	2			6"
4	Reducing Slab	Precast Concrete	Round	1			7"
5	Base	Precast Concrete	Round	1			44"

Primary Comments: 2 GRADES RINGS 3" EACH

Additional Comments:



	PIPE ID
1	554-149 to 554-136
2	554-137 to 554-136
3	554-148 to 554-136
4	554-136 to 554-135



Line/Connection Comments:

554-149 to 554-136

54.3' INSPECTED COMPLETE 7/17/18

554-137 to 554-136

INSPECTED 247.8' COMPLETE 7/17/18

554-136 to 554-135

340.6' INSPECTED COMPLETE 7/16/18



554-136 North is up



Cover



Frame/Chimney, North is up



Effluent Mainline Connection



North influent pipe connection



Mainline Influent pipe connection



South influent pipe connection



554-148 to 554-136

CR NHS STORM DRAIN INSPECTIONS

STORM DRAIN STRUCTURE INSPECTION REPORT

Catchbasin Manhole # **554-137**

Date, Inspector(s), & Location

Date of Inspection: Tuesday, July 17, 2018

Inspector(s): Miller

General Location: 7600 DEBARR RD

Pipe Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

	Diameter	Type	In-Effluent	Rim to Invert	Depth of Flow	Fill Depth	Connection Type	Grade Score
1	24"	CMP	Influent	50"			Grouted	1
2	24"	CMP	Effluent	50"			Grouted	1
3	18"	CPEP	Influent	52"			Grouted	1

Structure Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

Overall Structural Condition: 1

Steps: 2, Polyvinyl Coated, score 1

Depth of Sump: 20"

Depth of Debris in Sump: 0" to 6"

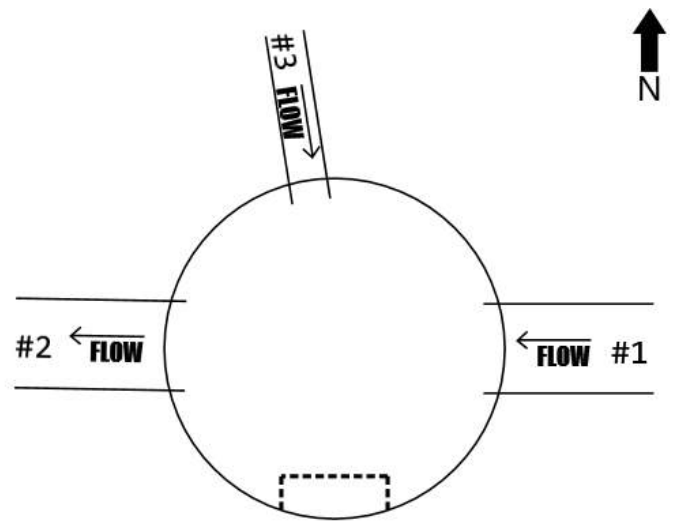
	Component	Material	Geometry	Grade Score	Dim A	Dim B	Height
1	Cover - Standard Cover	Metal	Rectangular	1	36"	18"	
2	Frame	Metal	Rectangular	1			9"
3	Chimney	Precast Concrete	Round	1			9"
4	Reducing Slab	Precast Concrete	Round	1			8"
5	Base	Precast Concrete	Round	1			44"

Primary Comments: 2 GRADE RINGS 2" 7"

Additional Comments:



	PIPE ID
1	554-138 to 554-137
2	554-137 to 554-136
3	554-147 to 554-137



Line/Connection Comments:

554-138 to 554-137

Inspected 284.6' COMPLETE 7/17/18

554-137 to 554-136

INSPECTED 247.8' COMPLETE 7/17/18

554-147 to 554-137

64' INSPECTED COMPLETE 7/17/18



554-137 Facing Northwest



Cover



North is up



North is up



North is up

CR NHS STORM DRAIN INSPECTIONS

STORM DRAIN STRUCTURE INSPECTION REPORT

Catchbasin Manhole # **554-138**

Date, Inspector(s), & Location

Date of Inspection: Tuesday, July 17, 2018

Inspector(s): Miller

General Location: 7600 DEBARR RD

Pipe Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

	Diameter	Type	In-Effluent	Rim to Invert	Depth of Flow	Fill Depth	Connection Type	Grade Score
1	24"	CMP	Influent	52"			Grouted	1
2	24"	CMP	Effluent	52"			Grouted	1
3	12"	CMP	Influent	45"			Grouted	1

Structure Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

Overall Structural Condition: 1

Steps: 2, Metal, score 1

Depth of Sump: 8"

Depth of Debris in Sump: 0" to 6"

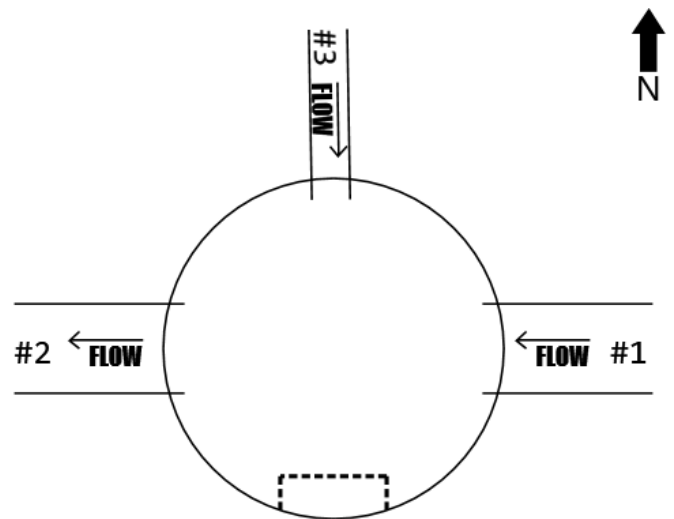
	Component	Material	Geometry	Grade Score	Dim A	Dim B	Height
1	Cover - Standard Cover	Metal	Rectangular	1	37"	26"	
2	Frame	Metal	Rectangular	1			3"
3	Chimney	Precast Concrete	Round	2			8"
4	Reducing Slab	Precast Concrete	Round	1			6"
5	Base	Precast Concrete	Round	1			43"

Primary Comments: 3 GRADES RINGS 2" 2" 4"

Additional Comments: UNABLE TO GET ACCURATE BASE AND SUMP DEPTH



	PIPE ID
1	554-139 to 554-138
2	554-138 to 554-137
3	554-146 to 554-138



Line/Connection Comments:

554-139 to 554-138

348' INSPECTED COMPLETE 7/17/18

554-138 to 554-137

Inspected 284.6' COMPLETE 7/17/18

554-146 to 554-138

60' INSPECTED COMPLETE 7/17/18



554-138 Facing North



Cover



Frame, North is up



Chimney, North is up



Effluent mainline connection



North influent pipe



Influent mainline connection

CR NHS STORM DRAIN INSPECTIONS

STORM DRAIN STRUCTURE INSPECTION REPORT

Catchbasin Manhole # **554-139**

Date, Inspector(s), & Location

Date of Inspection: Tuesday, July 17, 2018

Inspector(s): Miller

General Location:

Pipe Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

	Diameter	Type	In-Effluent	Rim to Invert	Depth of Flow	Fill Depth	Connection Type	Grade Score
1	24"	CMP	Influent	49"			Grouted	1
2	24"	CMP	Effluent	49"			Grouted	1
3	12"	CMP	Influent	42"			Grouted	1

Structure Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

Overall Structural Condition: 1

Steps: 2, Metal, score 1

Depth of Sump: 6"

Depth of Debris in Sump: 0" to 6"

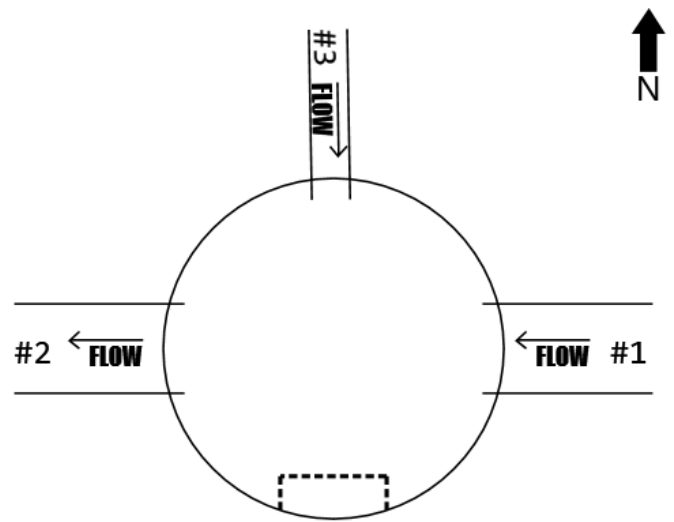
	Component	Material	Geometry	Grade Score	Dim A	Dim B	Height
1	Cover - Standard Cover	Metal	Round	1	25"		
2	Frame	Metal	Round	1			6"
3	Reducing Slab	Precast Concrete	Round	1			6"
4	Base	Precast Concrete	Round	1			40"

Primary Comments:

Additional Comments:



	PIPE ID
1	554-140 to 554-139
2	554-139 to 554-138
3	554-143 to 554-139



Line/Connection Comments:

554-140 to 554-139

304.5' INSPECTED COMPLETE 7/17/18

554-139 to 554-138

348' INSPECTED COMPLETE 7/17/18

554-143 to 554-139

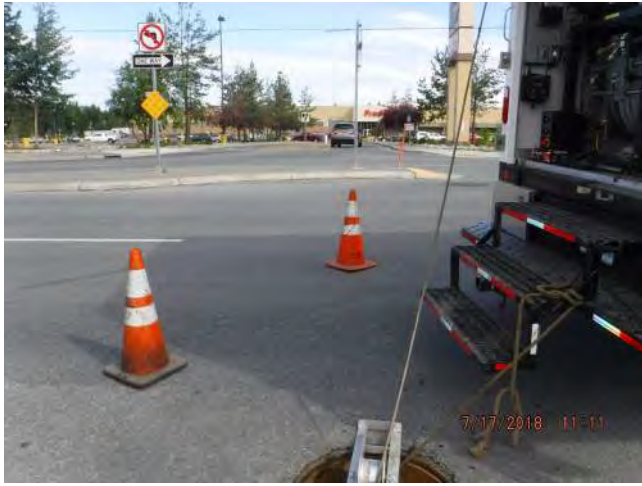
63.6' INSPECTED COMPLETE 7/17/18



Chimney



Frame, north is up



554-139 Facing North



Cover



North influent connection



Effluent mainline connection



Influent mainline connection

CR NHS STORM DRAIN INSPECTIONS

STORM DRAIN STRUCTURE INSPECTION REPORT

Catch Basin # **554-144**

Date, Inspector(s), & Location

Date of Inspection: Thursday, September 6, 2018

Inspector(s): Stratton

General Location: 7701 DEBARR RD

Pipe Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

	Diameter	Type	In-Effluent	Rim to Invert	Depth of Flow	Fill Depth	Connection Type	Grade Score
1	12"	CMP	Effluent	30"	1"		Missing	3
2	12"	CMP	Influent	30"	1"		Missing	4

Structure Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

Overall Structural Condition: 3

Steps: 0

Depth of Sump: 0"

Depth of Debris in Sump: 0" to 6"

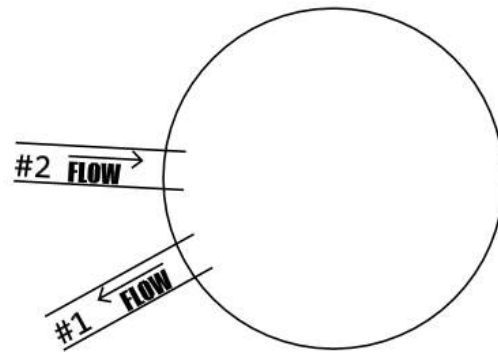
	Component	Material	Geometry	Grade Score	Dim A	Dim B	Height
1	Cover - Standard Curb inlet	Metal	Rectangular	1	36"	18"	
2	Frame	Metal	Rectangular	3			6"
3	Base	Precast Concrete	Rectangular	3			25"

Primary Comments: inspection completed. Pipes extend 1ft into mh. Frame and base cracked

Additional Comments:



	PIPE ID
1	554-144 to 554-143
2	554-145 to 554-144



Line/Connection Comments:

554-144 to 554-143

inspection completed 25.1 feet 9/6/18

554-145 to 554-144

inspection completed 66.9 feet 9/6/18



554-144 Facing Northeast



Frame, Broken Curb Inlet

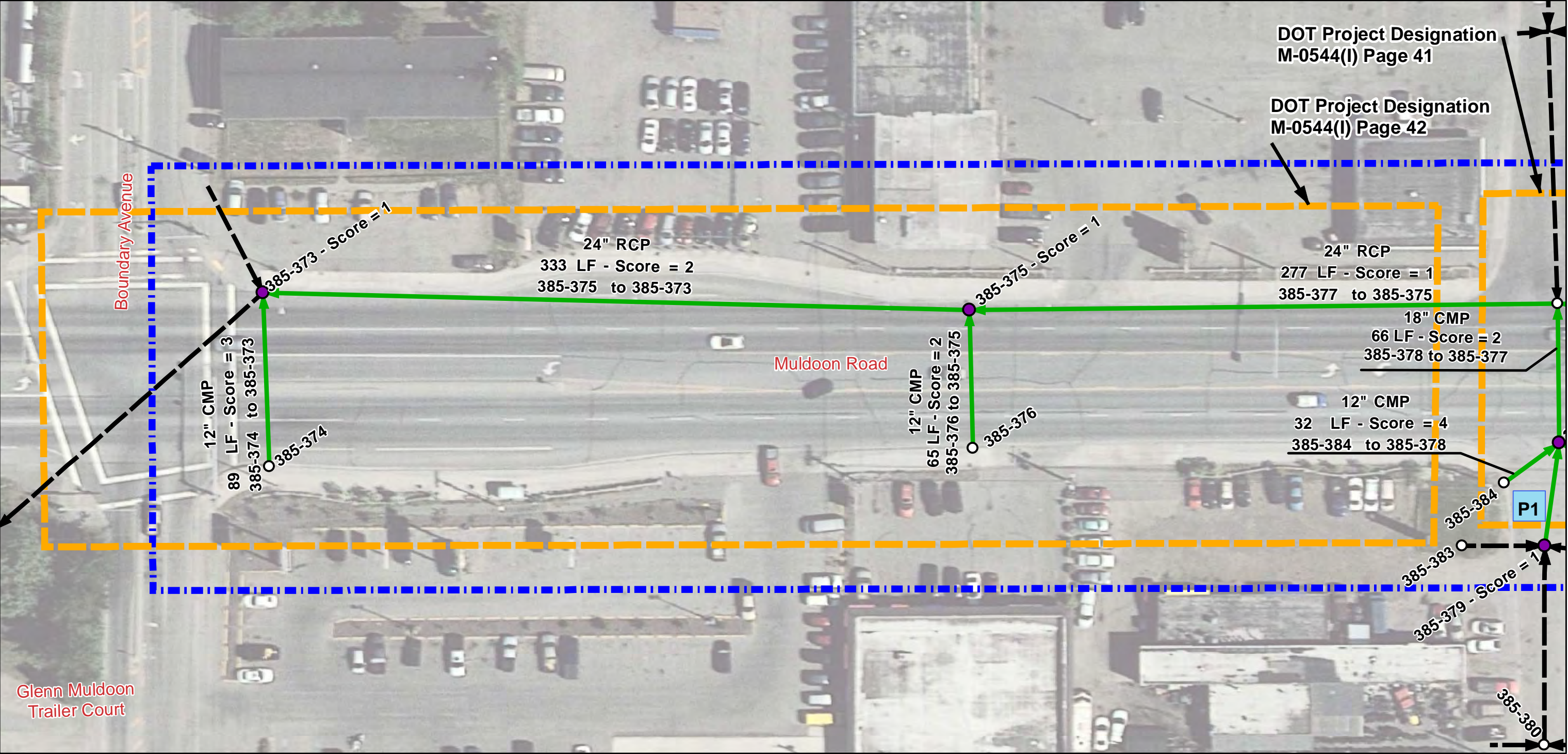


Northeast is up

**Muldoon Road from
Boundary Ave. to Northern Lights Blvd.**

Storm Drain System Maps

Muldoon Road: Boundary Avenue to East Northern Lights Boulevard



Legend

Manhole/Catchbasin

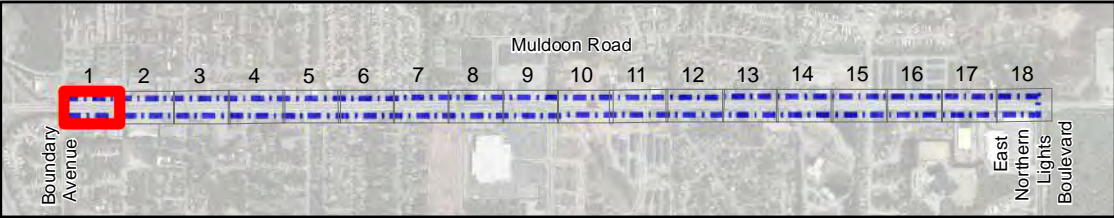
- Inspected
- Not Inspected

Pipe Segment

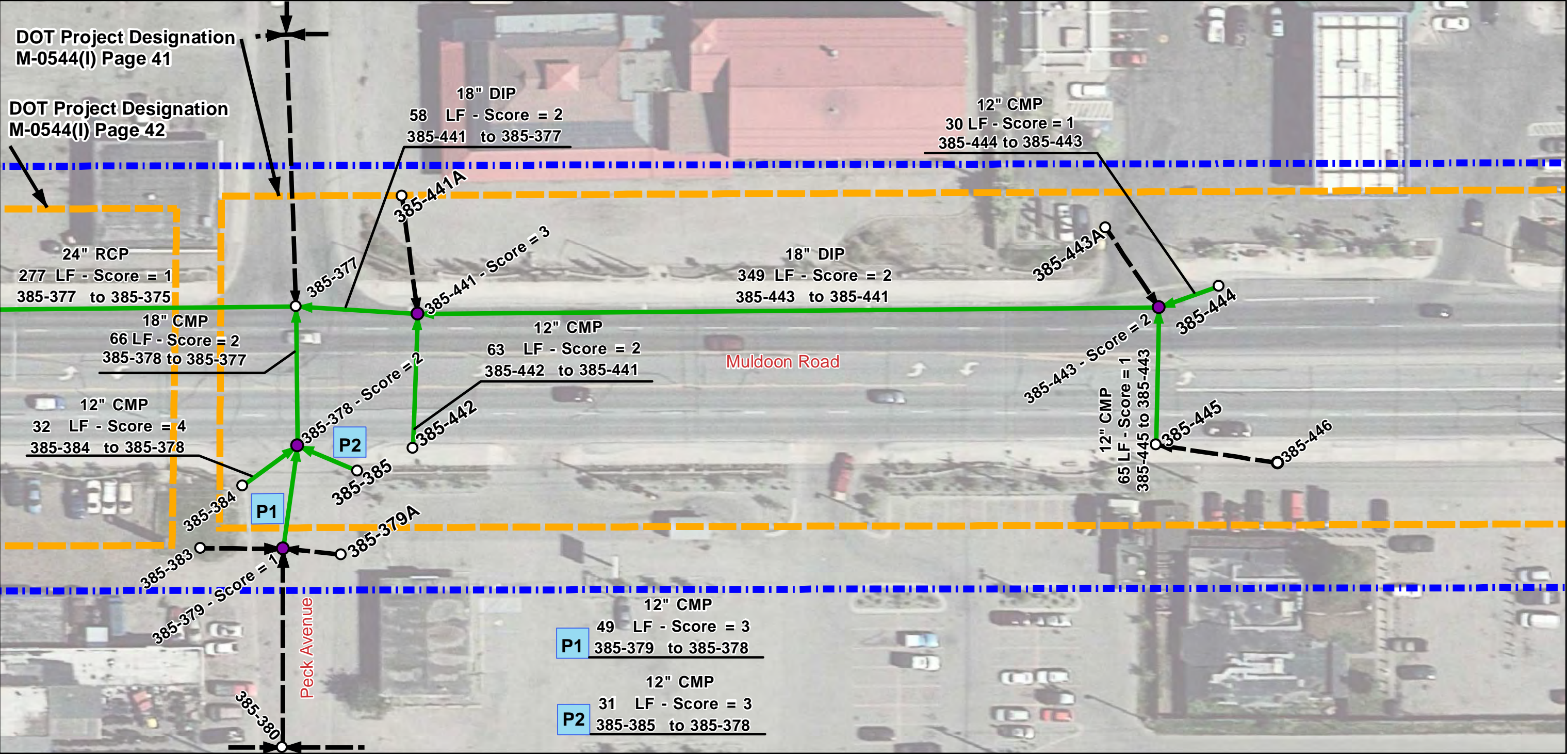
- Inspected
- Not Inspected

Score

- 0 - No Defect
- 1 - Minor Defect
- 2 - Minor to Moderate Defect
- 3 - Moderate Defect
- 4 - Significant Defect
- 5 - Most Significant Defect
- N - Not Scored



Muldoon Road: Boundary Avenue to East Northern Lights Boulevard



Legend

Manhole/Catchbasin

- Inspected
- Not Inspected

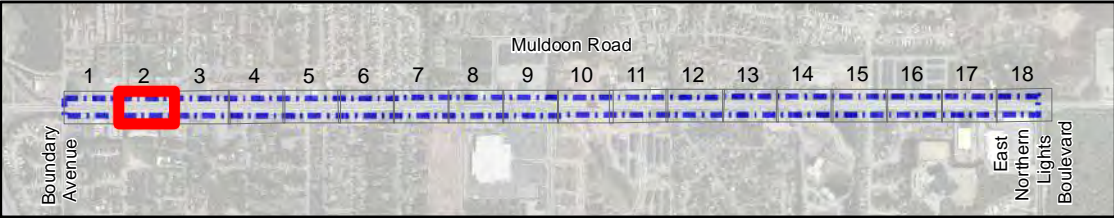
Pipe Segment

- Inspected
- Not Inspected

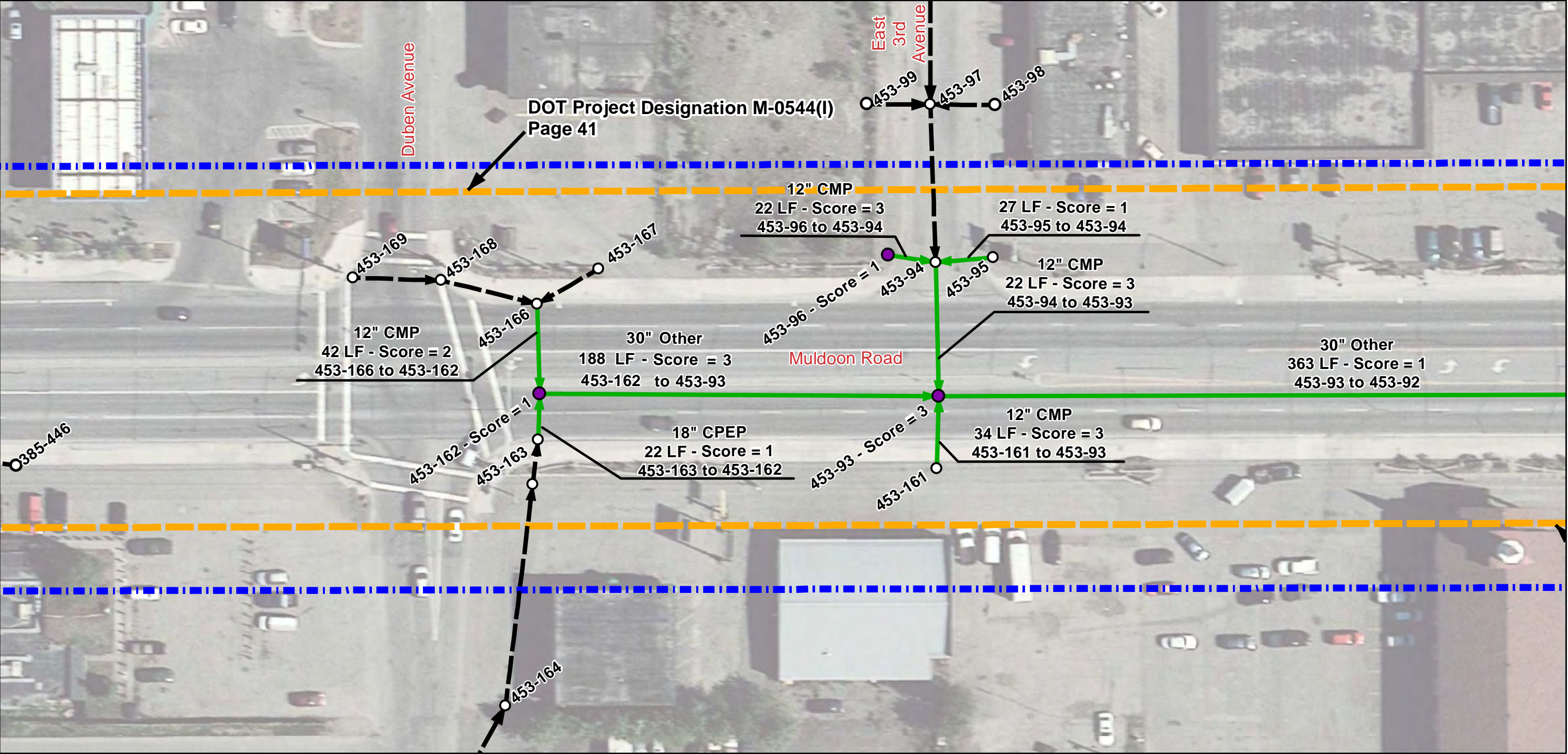
Score

- 0 - No Defect
- 1 - Minor Defect
- 2 - Minor to Moderate Defect
- 3 - Moderate Defect
- 4 - Significant Defect
- 5 - Most Significant Defect
- N - Not Scored

- Project Area
- Asbuilt Designation



Muldoon Road: Boundary Avenue to East Northern Lights Boulevard



Legend

Manhole/Catchbasin

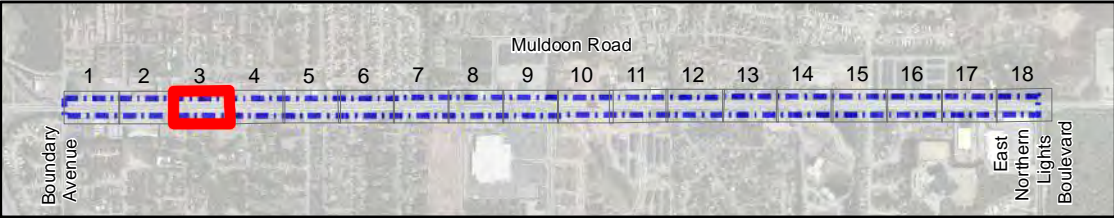
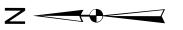
- Inspected
- Not Inspected

Pipe Segment

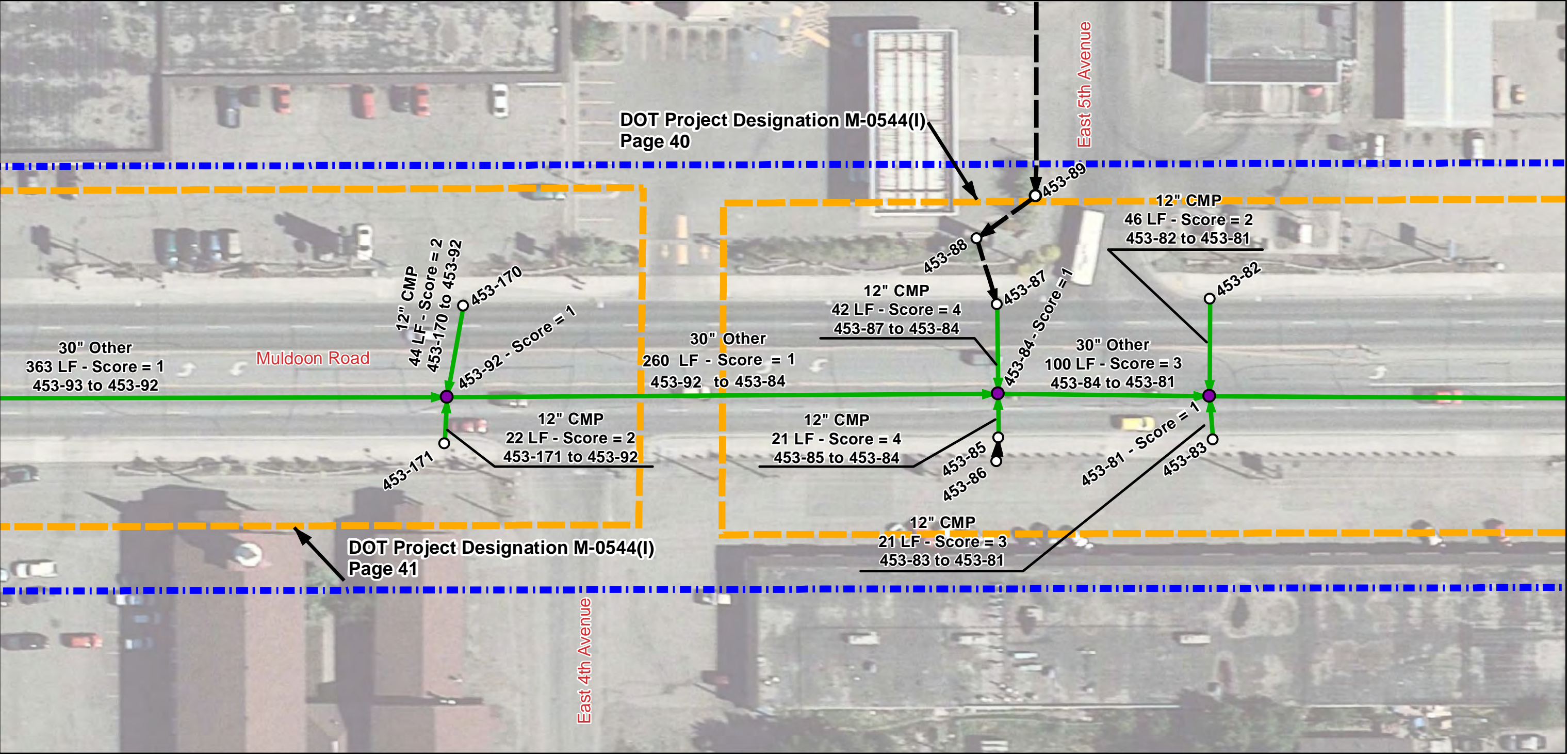
- Inspected
- Not Inspected

Score

- 0 - No Defect
- 1 - Minor Defect
- 2 - Minor to Moderate Defect
- 3 - Moderate Defect
- 4 - Significant Defect
- 5 - Most Significant Defect
- N - Not Scored



Muldoon Road: Boundary Avenue to East Northern Lights Boulevard



Legend

Manhole/Catchbasin

- Inspected
- Not Inspected

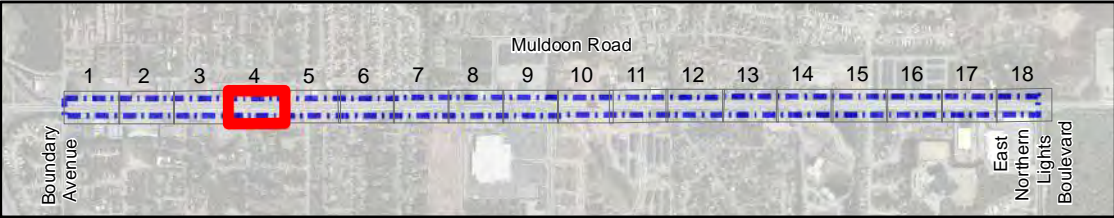
Pipe Segment

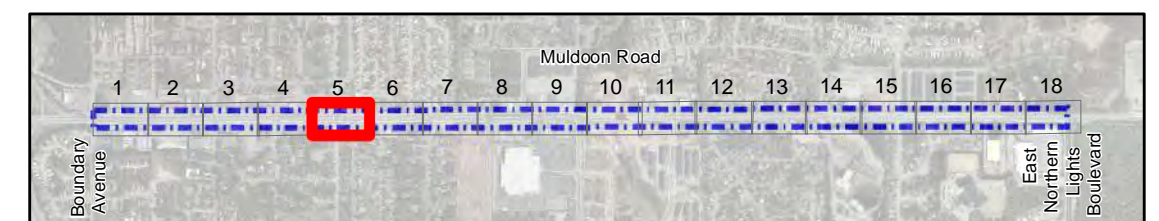
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- - - Not Inspected

Score

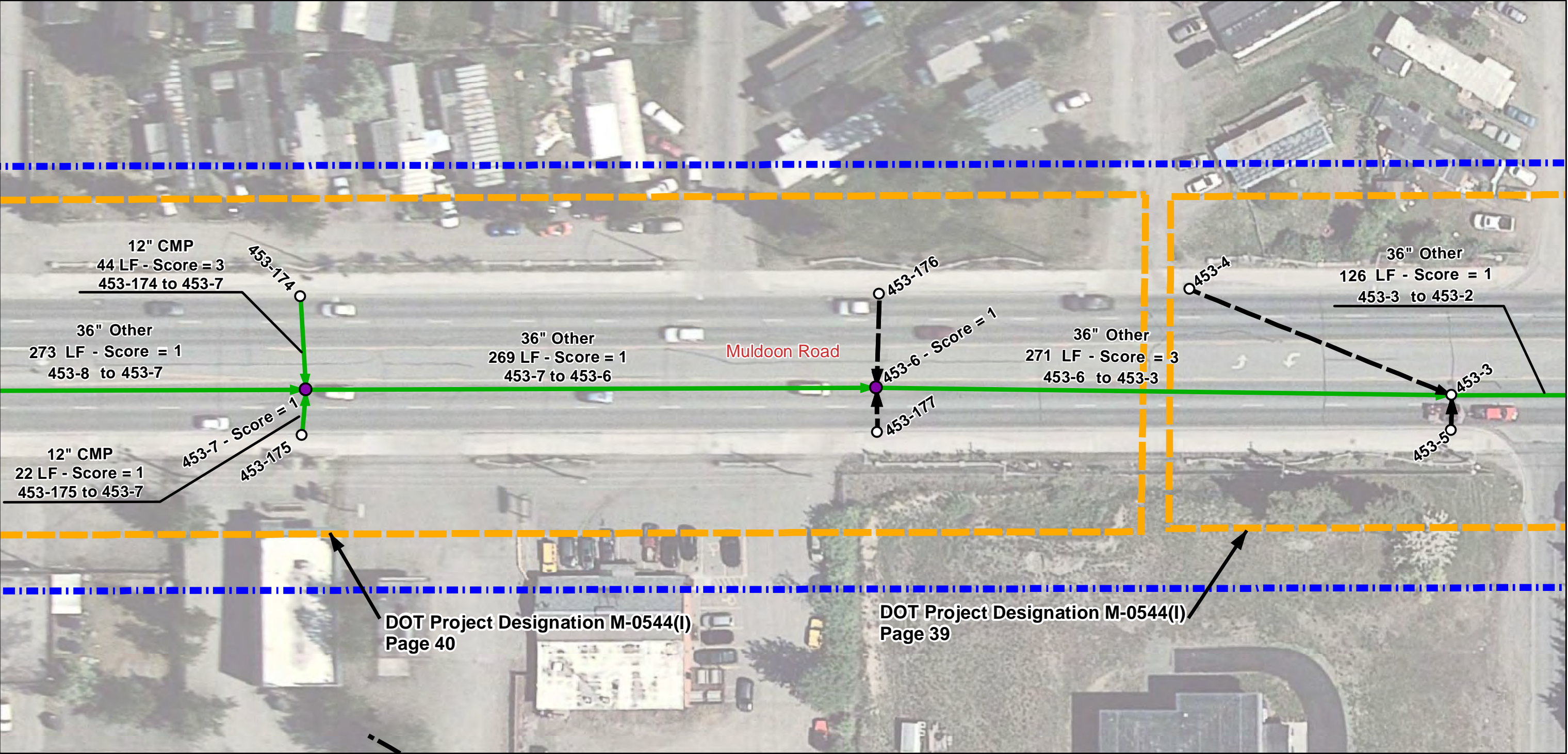
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- Project Area
- Asbuilt Designation





Muldoon Road: Boundary Avenue to East Northern Lights Boulevard



Legend

Manhole/Catchbasin

- Inspected
- Not Inspected

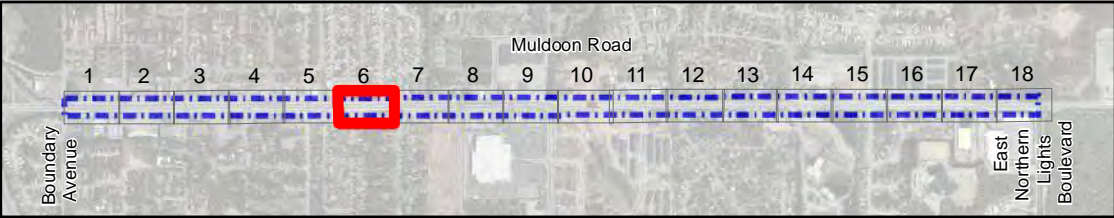
Pipe Segment

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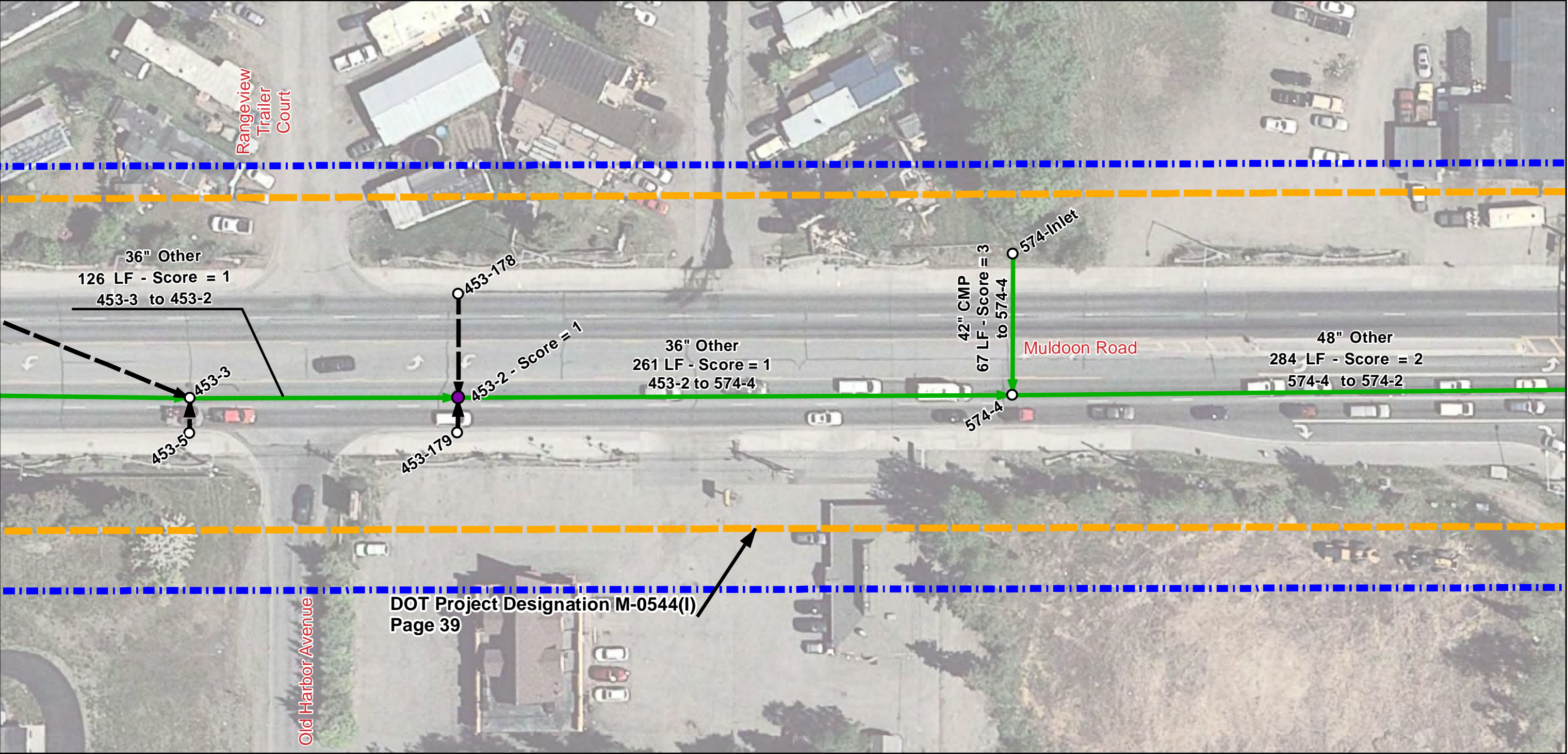
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Muldoon Road: Boundary Avenue to East Northern Lights Boulevard



Legend

Manhole/Catchbasin

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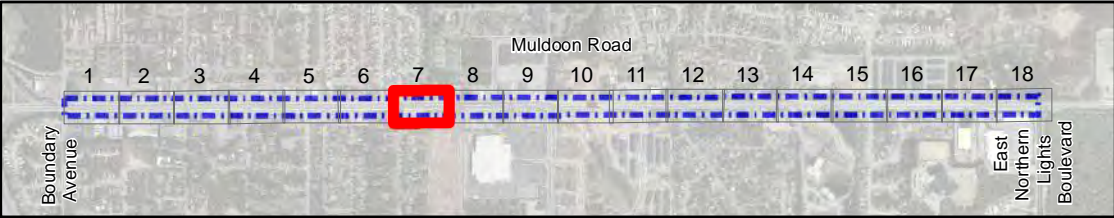
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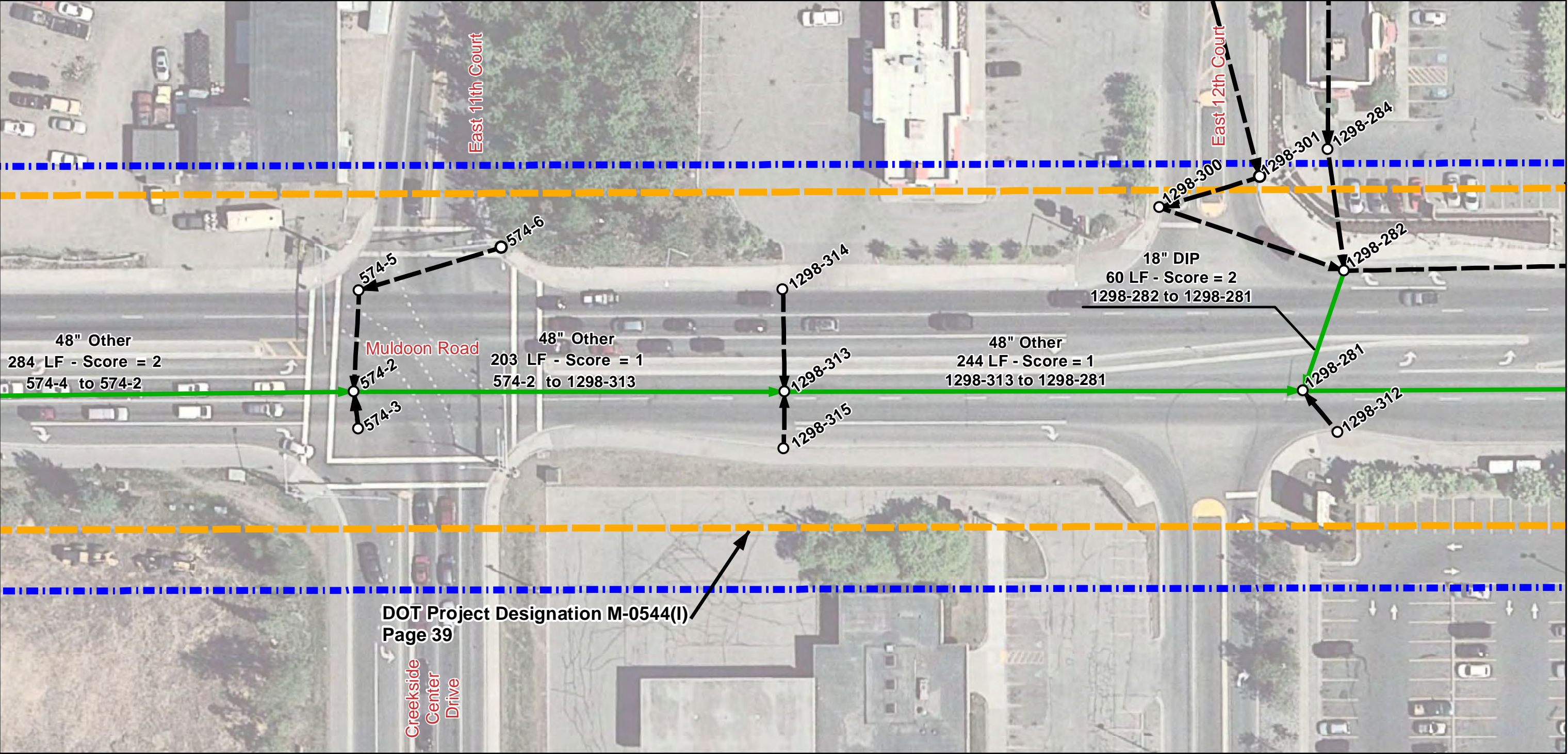
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Muldoon Road: Boundary Avenue to East Northern Lights Boulevard



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Manhole/Catchbasin

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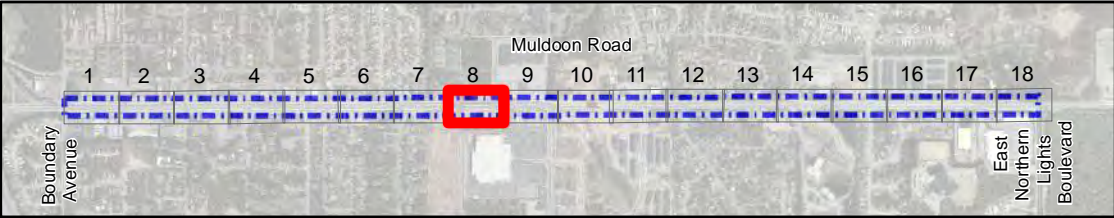
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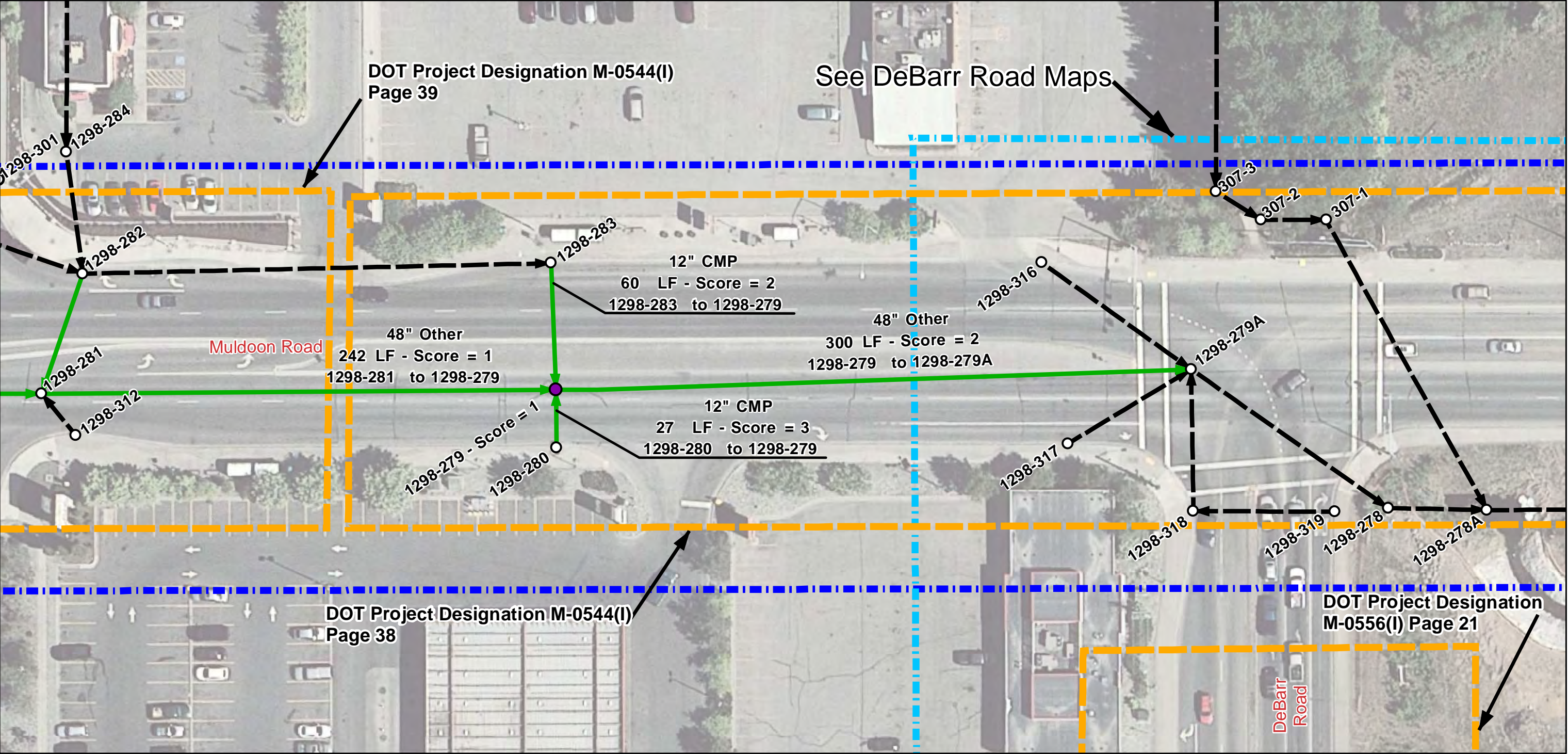
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Muldoon Road: Boundary Avenue to East Northern Lights Boulevard



Legend

Manhole/Catchbasin

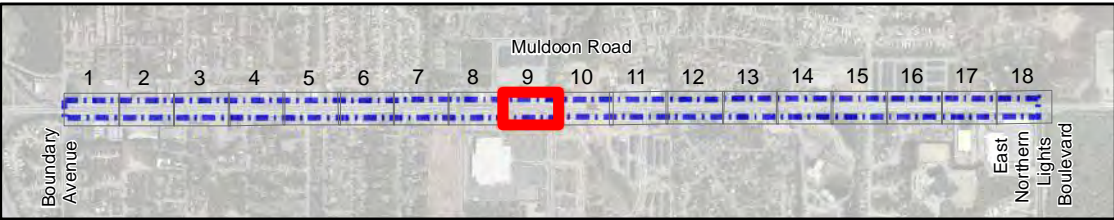
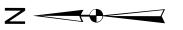
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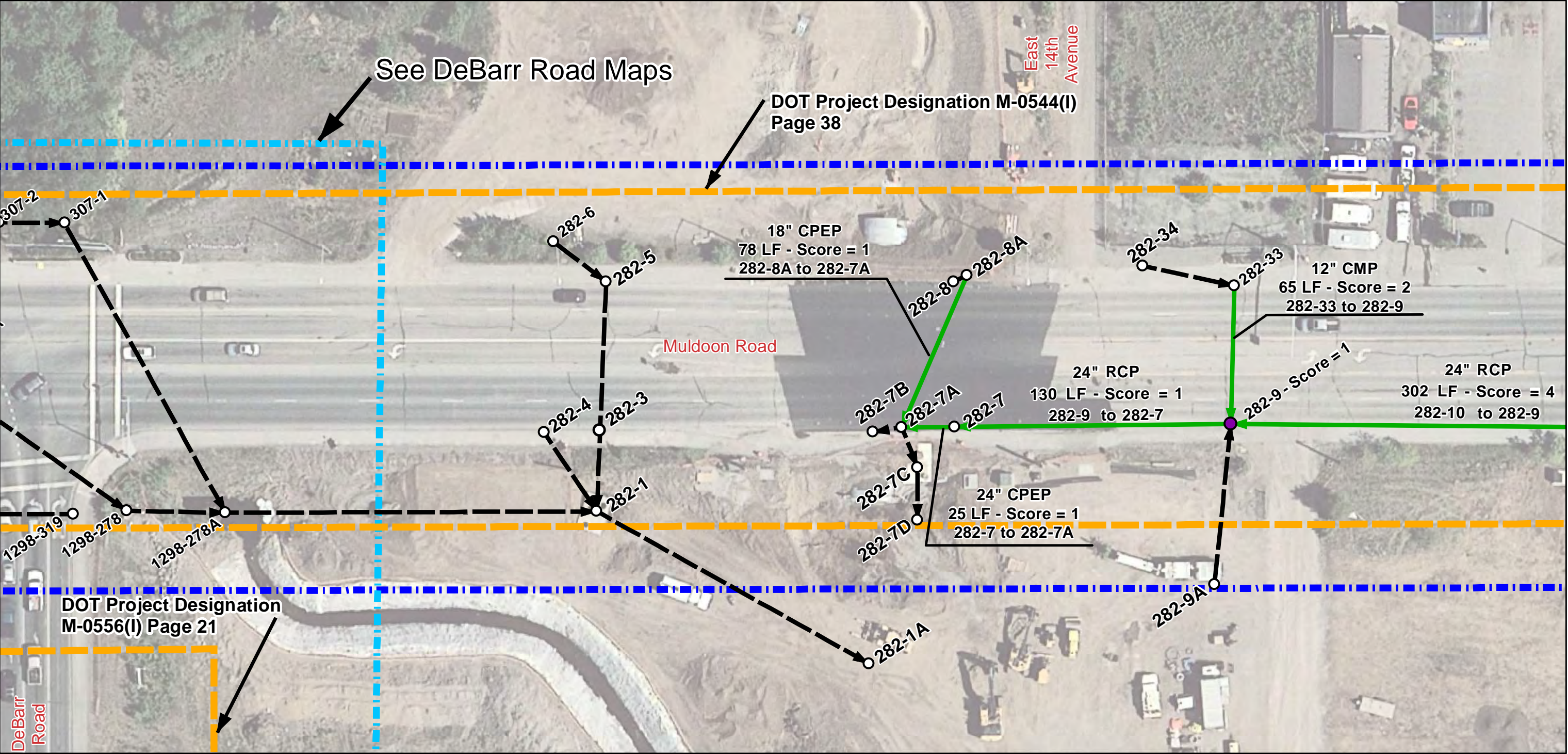
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Muldoon Road: Boundary Avenue to East Northern Lights Boulevard



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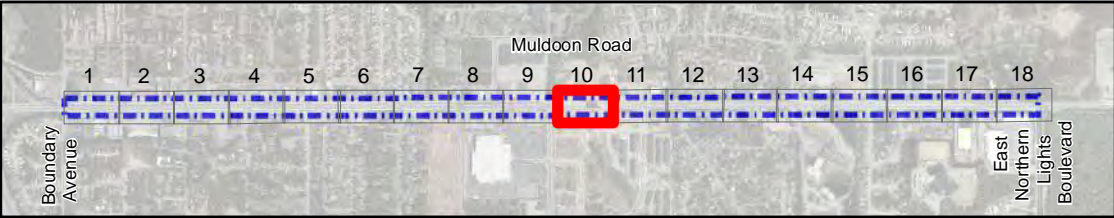
Pipe Segment

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- - -> Not Inspected

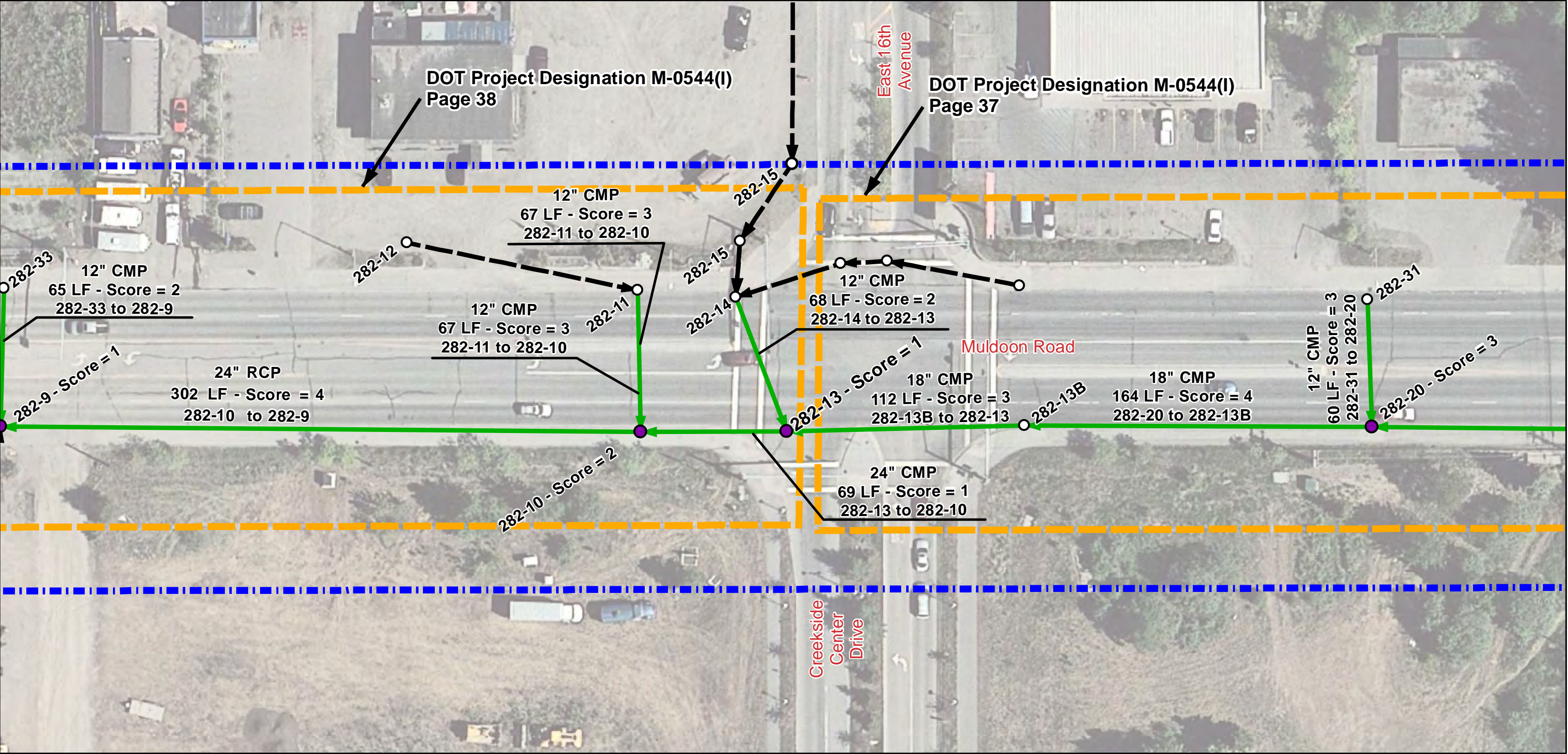
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Muldoon Road: Boundary Avenue to East Northern Lights Boulevard



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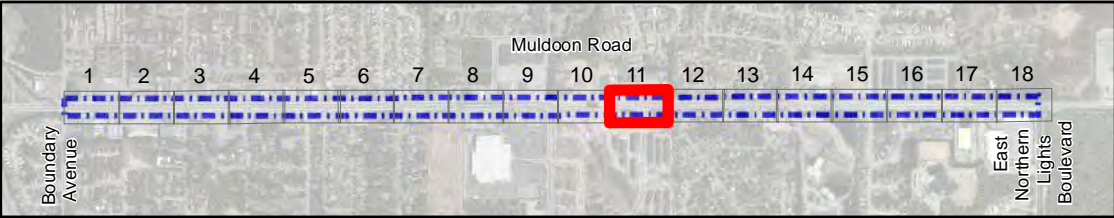
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- - - Not Inspected

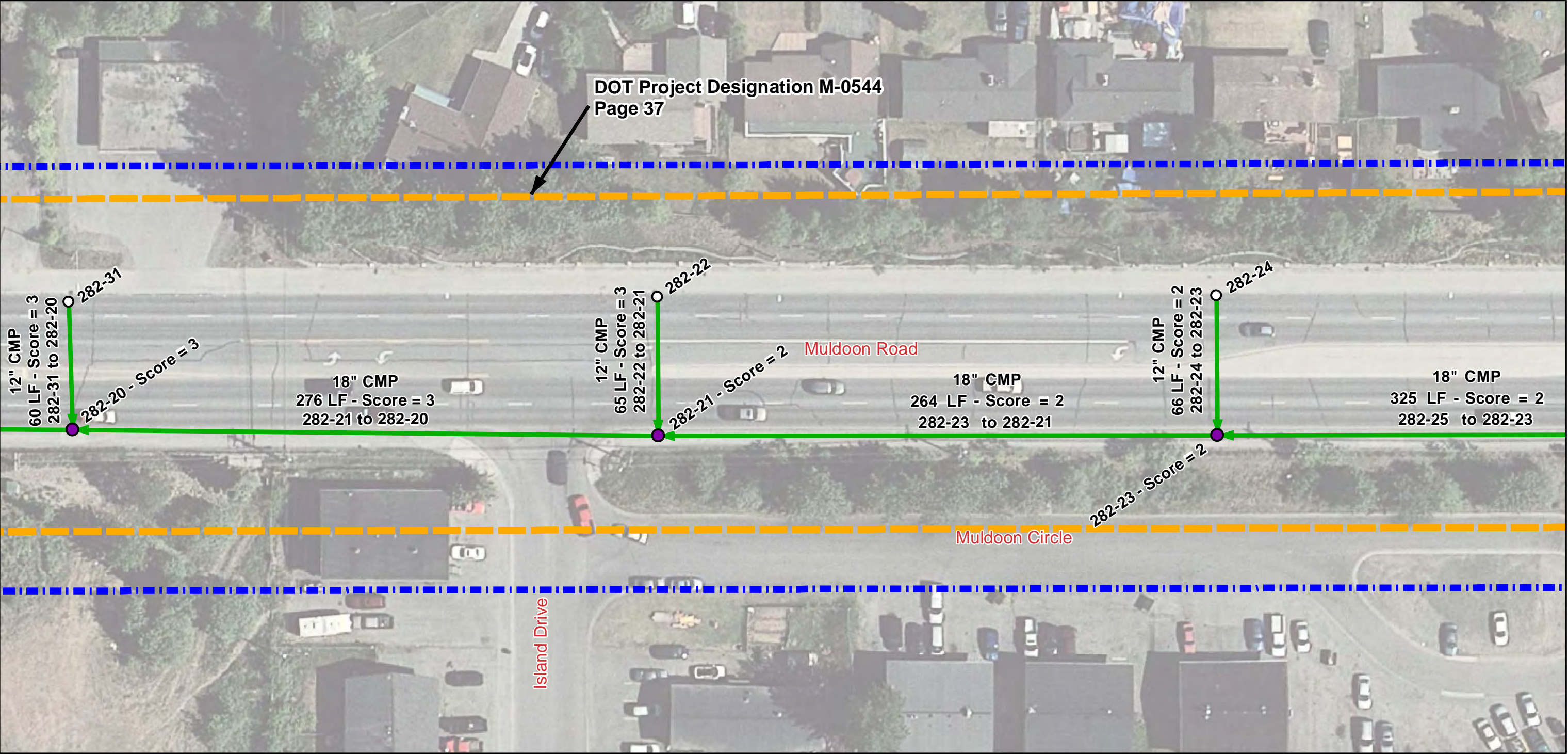
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Muldoon Road: Boundary Avenue to East Northern Lights Boulevard



Legend

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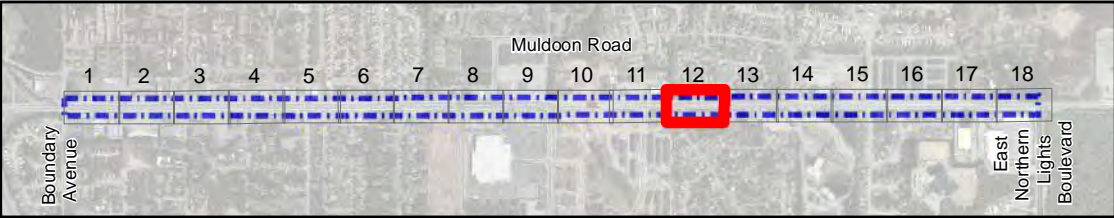
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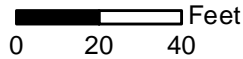
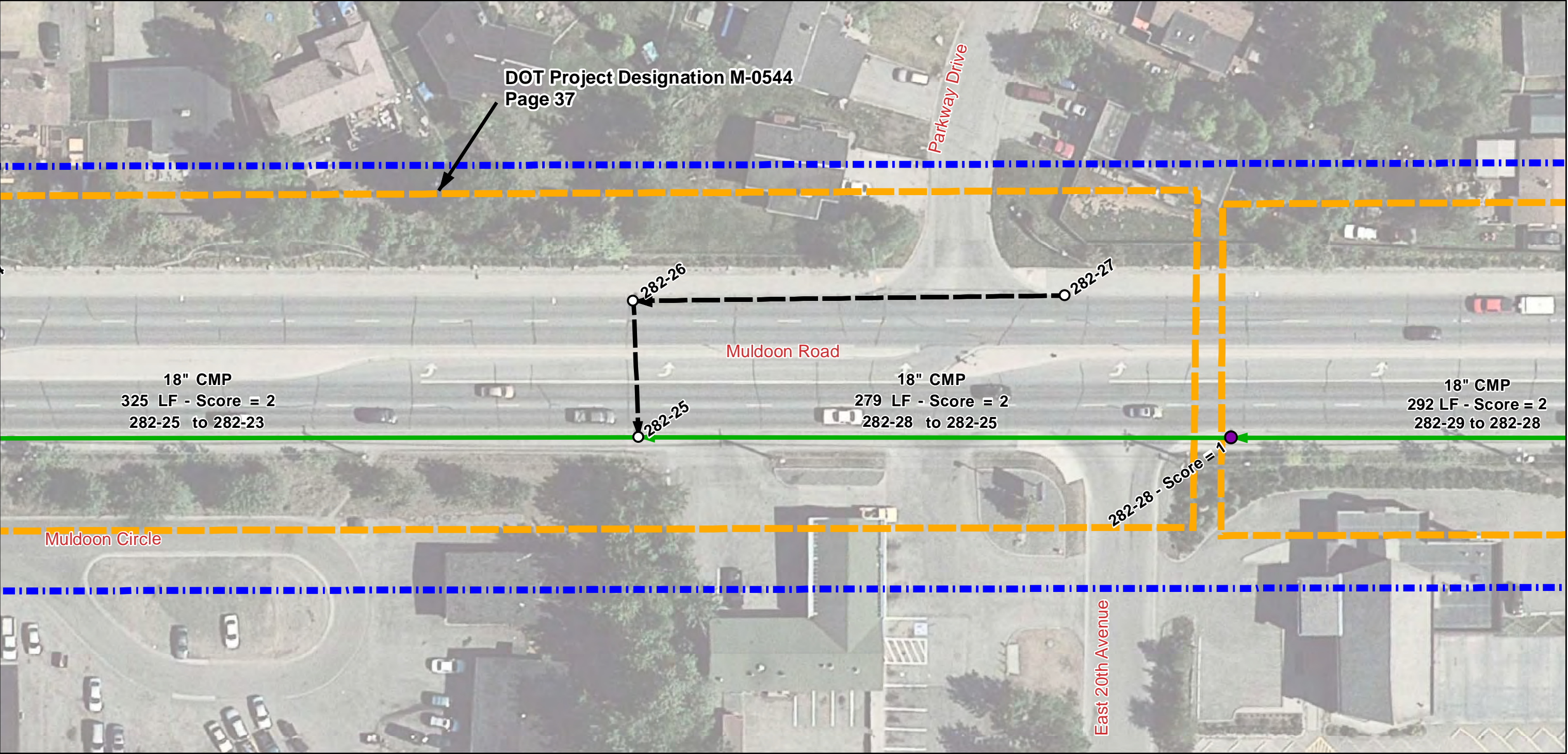
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Muldoon Road: Boundary Avenue to East Northern Lights Boulevard



Legend

Manhole/Catchbasin

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Pipe Segment

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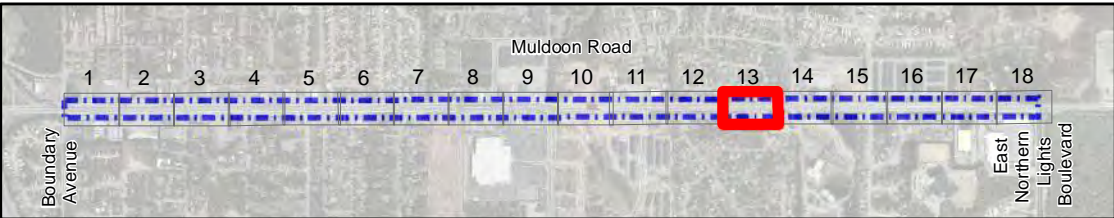
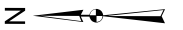
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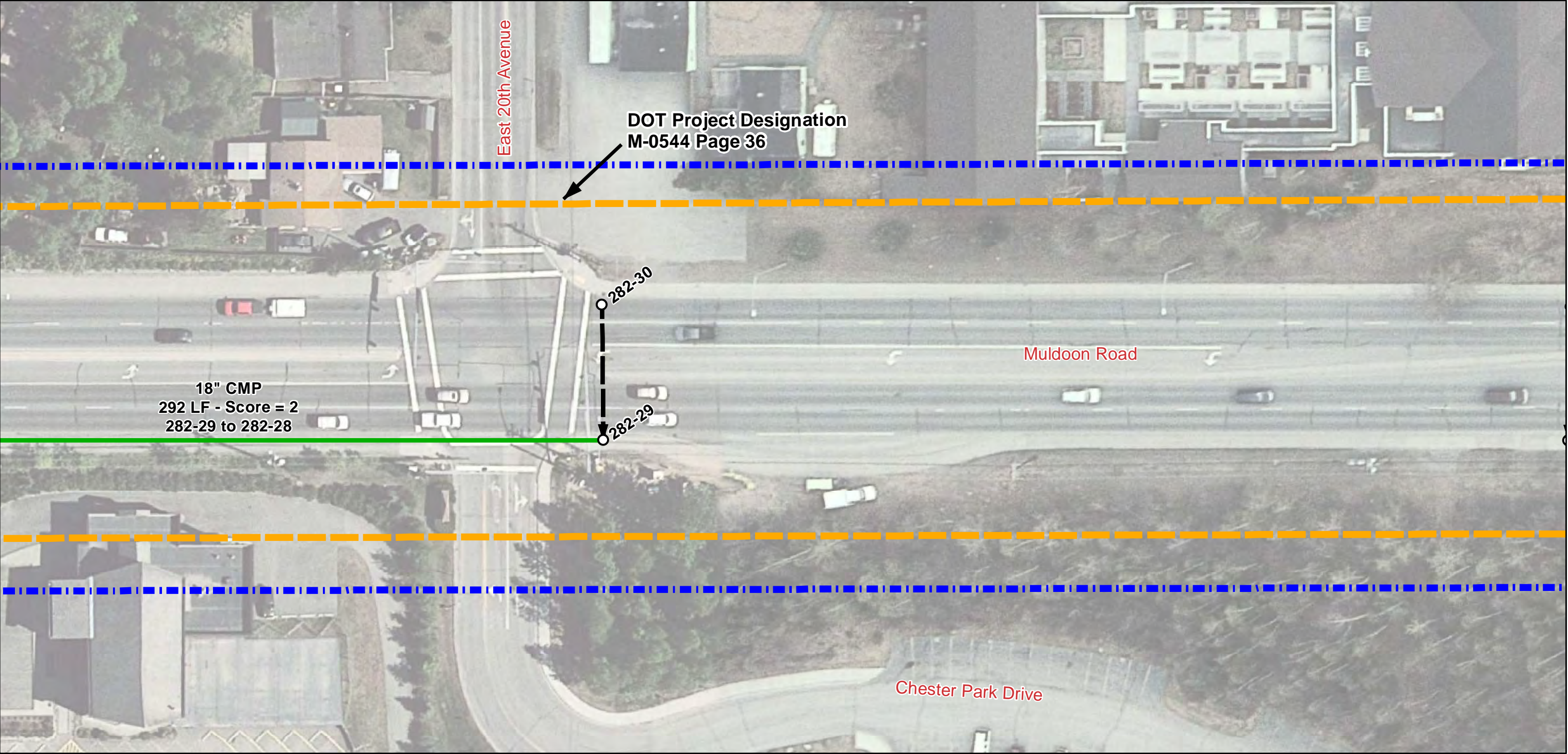
Project Area



Asbuilt Designation



Muldoon Road: Boundary Avenue to East Northern Lights Boulevard



Legend

Manhole/Catchbasin

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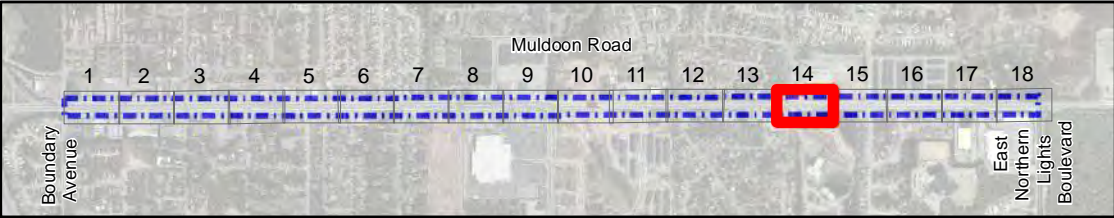
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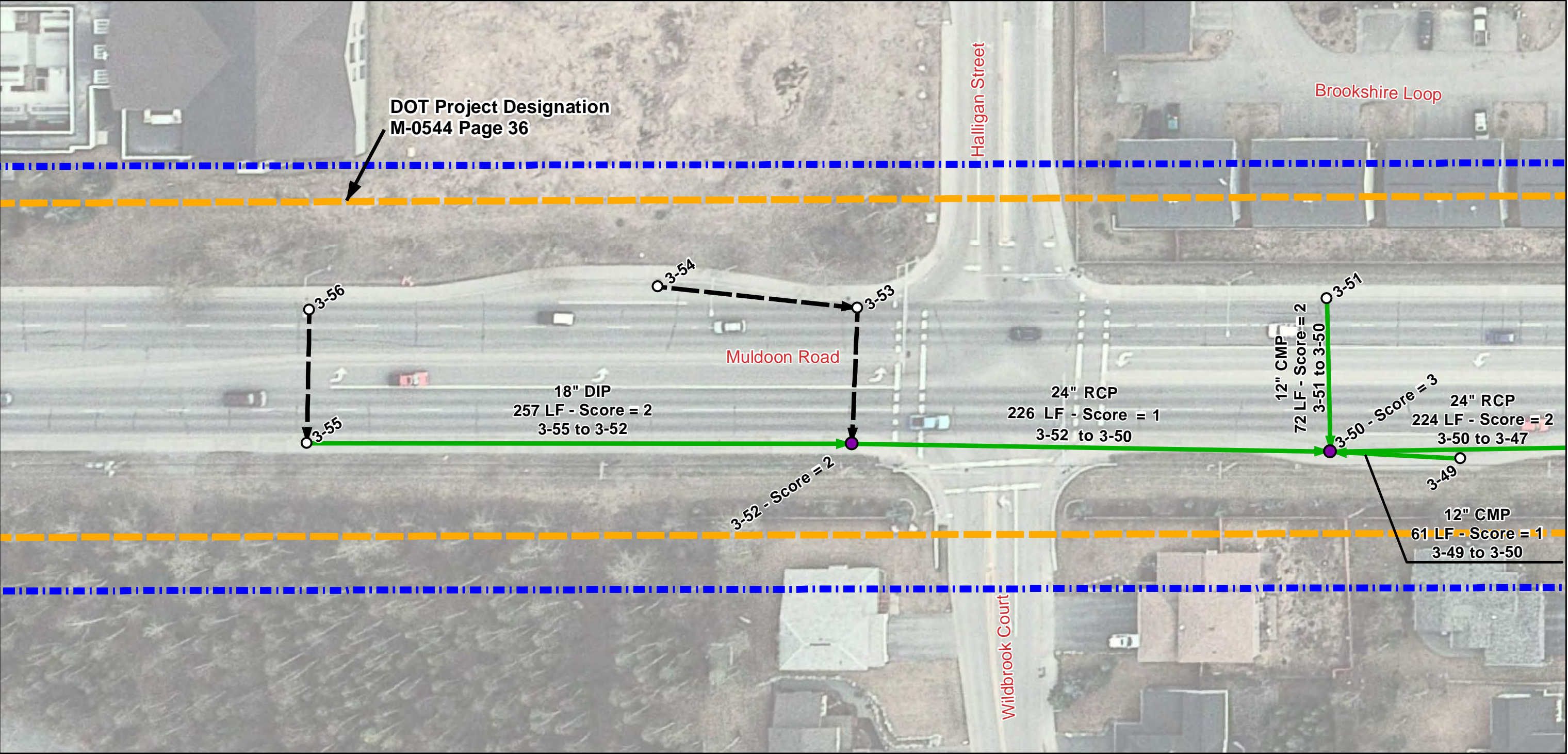
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Muldoon Road: Boundary Avenue to East Northern Lights Boulevard



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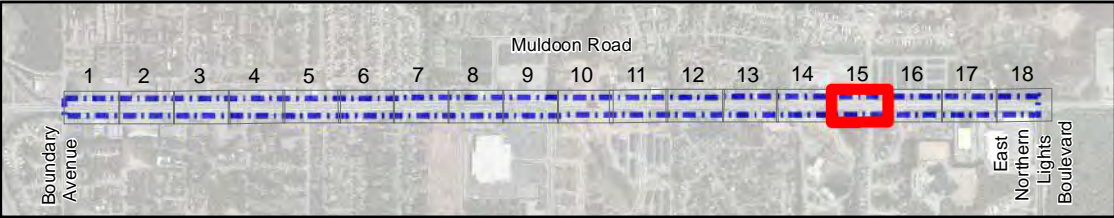
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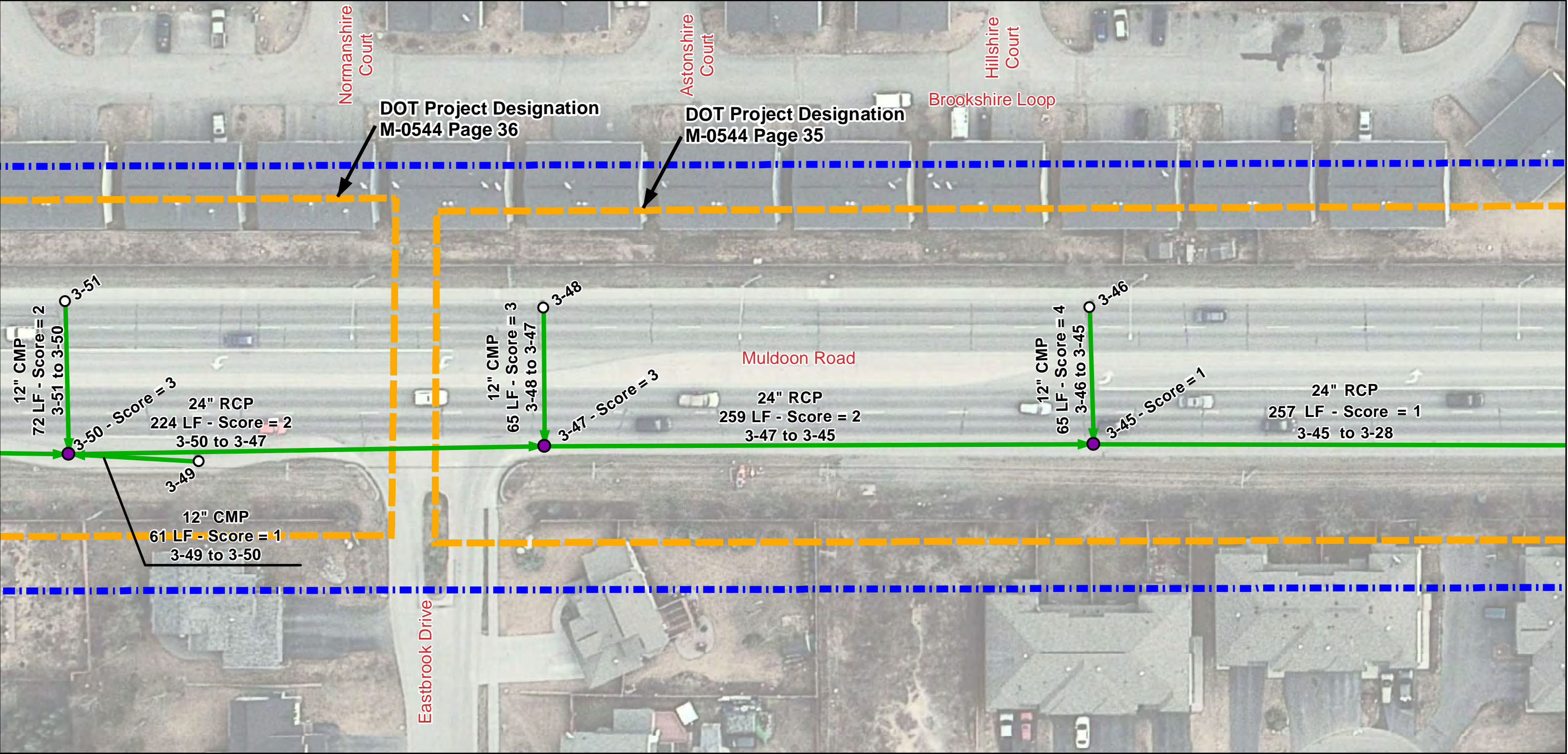
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Muldoon Road: Boundary Avenue to East Northern Lights Boulevard



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Manhole/Catchbasin

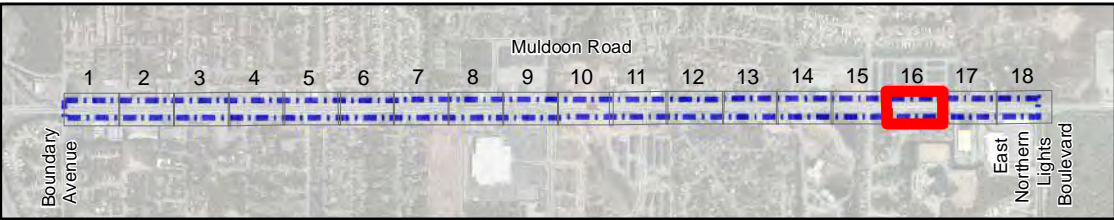
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Pipe Segment

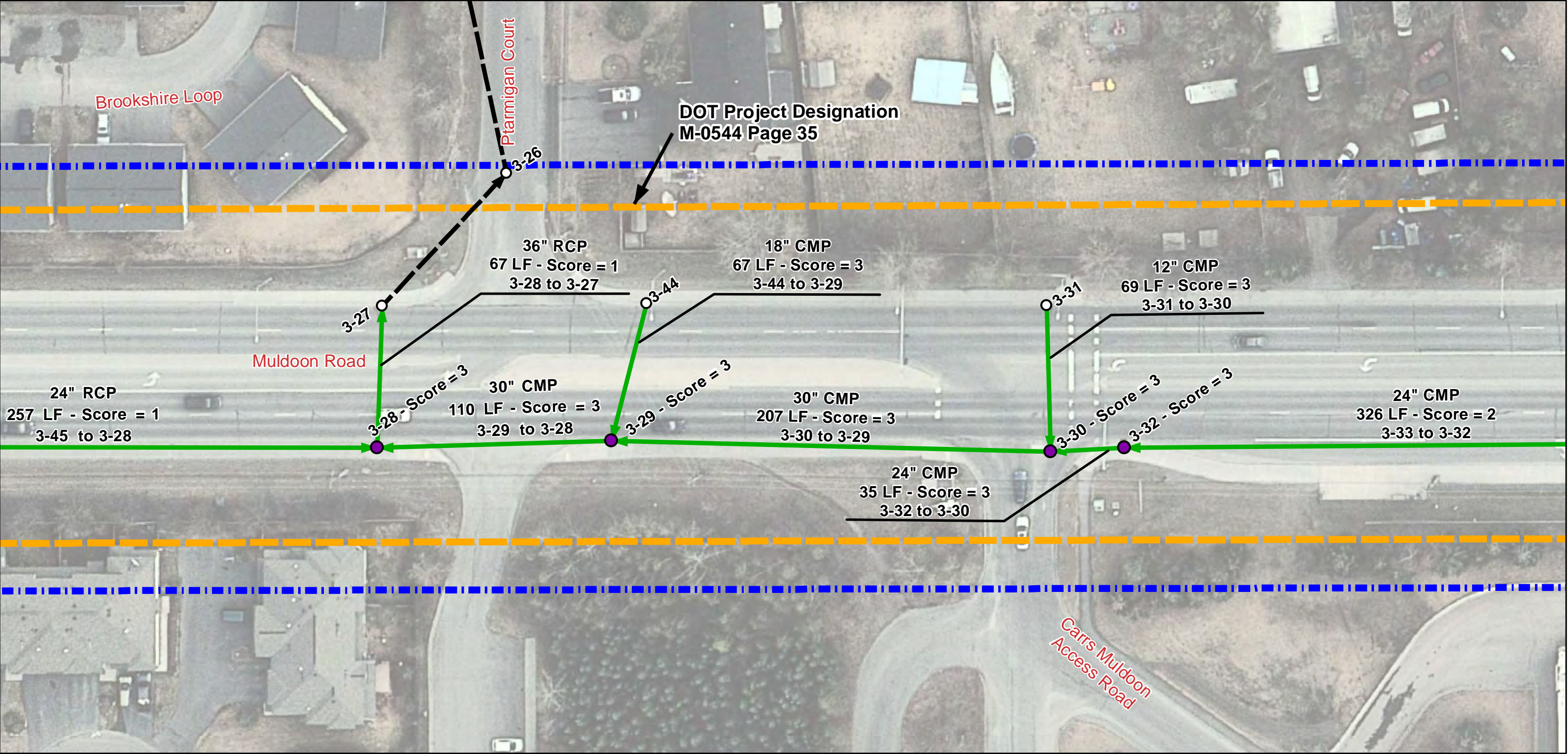
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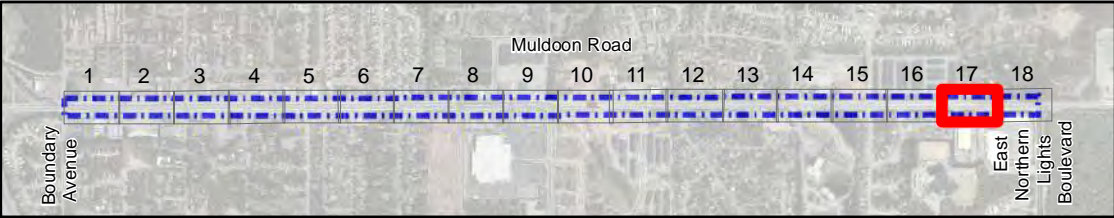
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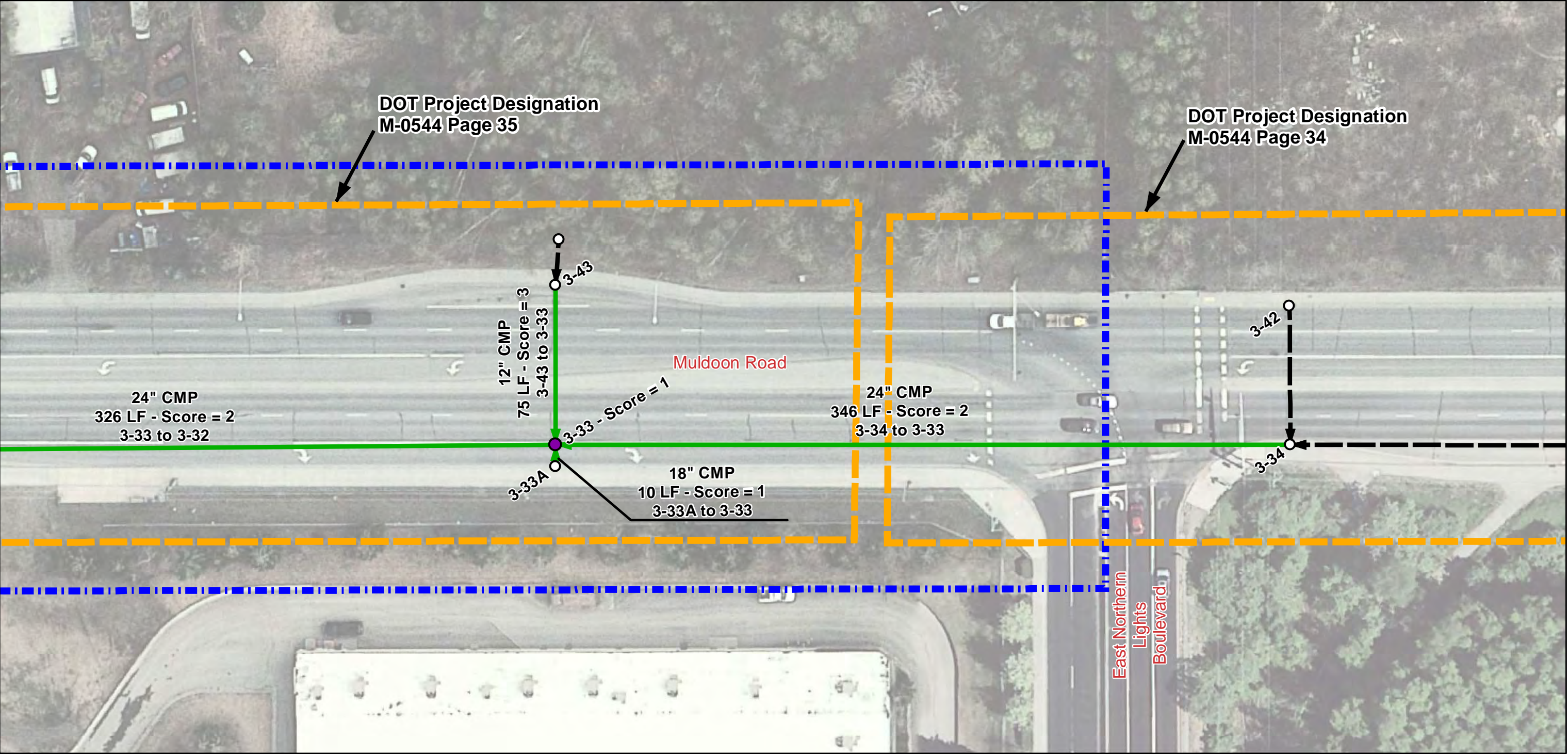
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Muldoon Road: Boundary Avenue to East Northern Lights Boulevard



Legend

Manhole/Catchbasin

- Inspected
- Not Inspected

Pipe Segment

- Inspected
- Not Inspected

Score

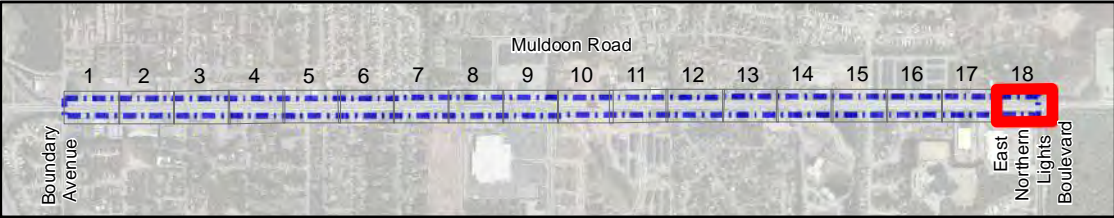
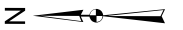
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Project Area



Asbuilt Designation



CCTV Data Summary and Inspection Logs

CR NHS Storm Drain Condition Report
Proj. No. 0A31055 / Z591280000

	NHS Storm Drain Inspections			Defect grades: 0=No Defect, 1=Minor Defect, 2=Minor to Moderate Defect, 3=Moderate Defect, 4=Significant Defect, 5=Most Significant Defect									
	Muldoon Road (Boundary Ave. to Northern Lights)			Condition of Components									
		Avg. Height	Material										
Page # in Appendix A	Upstream Structure No.	Downstream Structure No.	Location	Pipe Dia. (in.)	Material	CCTV Complete	CCTV Date	CCTV Length (ft.)	GIS Length (ft.)	CCTV Direction	General Condition Grade Score	Flow Depth (in.)	Additional Comments
1	385-374	385-373	Muldoon Road at Boundary Avenue	12	CMP	Yes	9/20/2018	79	82	Upstream	3	Minimal	Debris, discoloration, surface corrosion visible in invert
	385-375	385-373	East Muldoon Road south of Boundary Avenue	24	RCP	Yes	9/20/2018	329	333	Downstream	2	1-2"	Minimal debris, multiple cracks
	385-376	385-375	Muldoon Road north of Peck Avenue	12	CMP	No	9/20/2018	63	65	Upstream	2	None	Stopped by debris, upstream manhole visible, minor surface corrosion, unable to observe invert
	385-377	385-375	East Muldoon Road at Peck Avenue	24	RCP	Yes	9/20/2018	276	277	Upstream	1	1-2"	No major defects observed
2	385-384	385-378	West Muldoon Road at Peck Avenue	12	CMP	Yes	9/25/2018	28	32	Upstream	4	1-6"	Surface corrosion visible at flow line, belly/sag in pipe at approximately the midspan of pipe, pipe over 1/2 full of water at midspan
	385-385	385-378	West Muldoon Road at Peck Avenue	12	CMP	No	9/25/2018	10	31	Upstream	3	2-3"	Surface corrosion, survey stopped by debris, possible belly in pipe
	385-378	385-377	Muldoon Road at Peck Avenue	18	CMP	Yes	9/25/2018	65	66	Upstream	2	Minimal	Debris, evidence of corrosion in invert
	385-379	385-378	West Muldoon Road at Peck Avenue	12	CMP	Yes	9/25/2018	106	49	Upstream	3	0-1"	Surface corrosion, debris
	385-441	385-377	East Muldoon Road at Peck Avenue	18	DIP	Yes	9/20/2018	55	58	Downstream	2	Minimal	Minor surface corrosion, debris
	385-442	385-441	Muldoon Road south of Peck Avenue	12	CMP	Yes	9/20/2018	65	63	Upstream	2	None	Invert broken in downstream MH, approximately 2" hole, minor surface corrosion
	385-443	385-441	East Muldoon Road north of Duben Avenue	18	DIP	Yes	9/20/2018	350	349	Downstream	2	0-1"	Various levels of debris, minor surface corrosion, invert probed, metal sound
	385-445	385-443	Muldoon Road north of Duben Avenue	12	CMP	Yes	9/20/2018	64	65	Upstream	1	None	Minor surface corrosion, stopped by debris approximately 2-3' from upstream end, clean pipe to observe invert
	385-444	385-443	East Muldoon Road north of Duben Avenue	12	CMP	Yes	9/20/2018	30	30	Upstream	1	Minimal	Various levels of debris, no major defects observed
3	453-163	453-162	West Muldoon Road south of Duben Avenue	18	CPEP	Yes	8/22/2018	17	22	Upstream	1	1-2"	Minimal debris, no major defects
	453-166	453-162	East Muldoon Road south of Duben Avenue	12	CMP	Yes	8/23/2018	42	42	Upstream	2	0-1"	Surface corrosion, downstream invert probed, metal appeared sound
	453-162	453-93	Muldoon Road north of E. 3rd Ave.	30	FRP	Yes	8/22/2018	185	188	Downstream	3	2-3"	Fiberglass pipe, debris, hole in pipe
	453-161	453-93	West Muldoon Road at E. 3rd Ave.	12	CMP	Yes	8/23/2018	27	34	Upstream	3	0-1"	Surface corrosion, debris, downstream invert probed, surface corrosion observed

CR NHS Storm Drain Condition Report
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	Muldoon Road (Boundary Ave. to Northern Lights)			Condition of Components									
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3	453-94	453-93	East Muldoon Road at E. 3rd Ave.	24	CMP	Yes	8/22/2018	62	63	Upstream	3	0-1"	Surface corrosion visible in invert, downstream invert probed, metal loss observed, hole in upstream invert
	453-96	453-94	East Muldoon Road at E. 3rd Ave.	12	CMP	Yes	9/20/2018	18	23	Downstream	1	Minimal	Debris, no major defects, zoomed view of next pipe
	453-95	453-94	East Muldoon Road at E. 3rd Ave.	12	CMP	No	N/A	N/A	27	N/A	1	None	Minimal debris, no major defects, pipe viewed with zoom from 453-96 to 453-94
	453-93	453-92	Muldoon Road south of E. 3rd Ave.	30	FRP	Yes	8/22/2018	372	363	Downstream	1	0-1"	Fiberglass pipe, no major defects
4	453-171	453-92	West Muldoon Road north of E. 4th Ave.	12	CMP	Yes	8/23/2018	20	22	Upstream	2	1-2"	Discoloration and minor surface corrosion, downstream invert probed, metal sound
	453-170	453-92	East Muldoon Road north of E. 4th Ave.	12	CMP	Yes	8/23/2018	43	44	Upstream	2	0-1"	Surface corrosion, minor debris, downstream invert probed, metal appeared sound
	453-92	453-84	Muldoon Road at E. 4th Ave.	30	FRP	Yes	8/22/2018	249	260	Upstream	1	0-1"	Fiberglass pipe, no major defects observed
	453-85	453-84	West Muldoon Road north of E. 5th Ave.	12	CMP	Yes	8/23/2018	17	21	Upstream	4	Minimal	Corrosion and holes, soil visible, downstream invert probed, metal loss in invert
	453-87	453-84	East Muldoon Road north of E. 5th Ave.	12	CMP	Yes	8/23/2018	43	42	Upstream	3	0-2"	Downstream Invert probed, metal appeared soft
	453-84	453-81	Muldoon Road at E. 5th Ave.	30	FRP	Yes	8/22/2018	97	100	Downstream	3	0-1"	Fiberglass pipe, pipe broken/punctured in multiple spots, minimal debris
	453-83	453-81	West Muldoon Road south of E. 5th Ave.	12	CMP	Yes	8/23/2018	17	21	Upstream	3	0-1"	Surface corrosion, metal loss seen in pipe, downstream invert probed, metal loss observed
	453-82	453-81	East Muldoon Road south of E. 5th Ave.	12	CMP	Yes	8/23/2018	43	46	Upstream	2	0-1"	Surface corrosion/discoloration, minimal debris, downstream invert probed, metal appeared sound
5	453-81	453-9	Muldoon Road south of E. 5th Ave.	30	FRP	Yes	8/22/2018	357	359	Downstream	3	0-1"	Fiberglass pipe, minimal debris, large pipe fracture at downstream end
	453-9	453-8	Muldoon Road at E. 6th Ave.	36	FRP	Yes	8/22/2018	126	131	Upstream	1	1-2"	Fiberglass pipe, no major defects
	453-173	453-8	West Muldoon Road north of Dover Ave.	12	CMP	Yes	8/23/2018	16	22	Upstream	3	1-2"	Surface corrosion in bottom half of pipe, debris throughout pipe
	453-172	453-8	East Muldoon Road north of Dover Ave.	12	CMP	Yes	8/23/2018	46	48	Upstream	3	0-1"	Surface corrosion and metal loss observed, minimal debris
	453-8	453-7	Muldoon Road at Dover Ave.	36	FRP	Yes	8/22/2018	268	273	Downstream	1	2-3"	Fiberglass pipe, minimal debris, no major defects observed
	453-175	453-7	West Muldoon Road south of Dover Ave.	12	CMP	Yes	8/23/2018	16	22	Upstream	1	Minimal	Minimal debris, no major defects

CR NHS Storm Drain Condition Report
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	NHS Storm Drain Inspections			Defect grades: 0=No Defect, 1=Minor Defect, 2=Minor to Moderate Defect, 3=Moderate Defect, 4=Significant Defect, 5=Most Significant Defect									
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5	453-174	453-7	East Muldoon Road south of Dover Ave.	12	CMP	Yes	8/23/2018	35	44	Upstream	3	0-1"	Multiple deformations, inspection stopped by pipe deformation
6	453-7	453-6	Muldoon Road at Rangeview Trailer Ct.	36	FRP	Yes	8/22/2018	268	269	Upstream	1	2-3"	Fiberglass pipe, minimal debris, no major defects observed
	453-6	453-3	Muldoon Road at Rangeview Trailer Ct.	36	FRP	Yes	8/22/2018	267	271	Downstream	3	1-2"	Fiberglass pipe, minimal debris, hole at 74 LF
7	453-3	453-2	Muldoon Road at Old Harbor Ave.	36	FRP	Yes	8/22/2018	120	127	Downstream	1	1-2"	Fiberglass pipe, minimal debris, no major defects observed
	453-2	574-4	Muldoon Road south of Old Harbor Ave.	36	FRP	Yes	8/22/2018	261	261	Downstream	1	1-2"	Fiberglass pipe, minimal debris, no major defects observed, metal thaw line in pipe
	574-Inlet	574-4	East Muldoon Road south of Old Harbor Ave.	42	CMP	Yes	8/24/2018	68	67	Upstream	3	0-1"	Surface corrosion, debris buildup on inlet structure
	574-4	574-2	Muldoon Road north of Creekside Center Dr.	48	FRP	Yes	8/24/2018	280	284	Downstream	2	3-4"	Fiberglass pipe, thaw pipe, hole in pipe
8	574-2	1298-313	Muldoon Road at Creekside Center Dr.	48	FRP	Yes	8/24/2018	196	203	Upstream	1	1-2"	Fiberglass pipe, no major defects
	1298-313	1298-281	Muldoon Road at E. 12th Ct.	48	FRP	Yes	8/24/2018	241	244	Downstream	1	1-2"	Fiberglass pipe, no major defects
	1298-282	1298-281	East Muldoon Road south of E. 12th Ct.	18	DIP	Yes	8/24/2018	42	60	Upstream	2	1-2"	Surface corrosion, organic material, possible invert corrosion
9	1298-281	1298-279	Muldoon Road south of E. 12th Ct.	48	FRP	Yes	8/24/2018	231	242	Upstream	1	1-2"	Fiberglass pipe, no major defects
	1298-280	1298-279	West Muldoon Road north of Debarr Road	12	CMP	Yes	8/24/2018	24	27	Upstream	3	None	Debris, surface corrosion and metal loss
	1298-283	1298-279	East Muldoon Road north of Debarr Road	12	CMP	Yes	8/24/2018	46	60	Upstream	2	Minimal	Minor surface corrosion, no major defects observed
	1298-279	1298-279A	Muldoon Road north of Debarr Road	48	FRP	No	8/24/2018	163	300	Downstream	2	2-3"	Fiberglass pipe, stopped by debris
10	282-8A	282-7A	Muldoon Road south of Debarr Road	18	CMP	Yes	7/31/2018	79	78	Upstream	1	Minimal	Debris, no major defects observed
	282-7	282-7A	Muldoon Road south of Debarr Road	24	CPEP	Yes	7/31/2018	15	25	Upstream	1	Minimal	No defects observed
	282-9	282-7	West Muldoon Road at E. 15th Ave.	24	RCP	Yes	7/31/2018	130	130	Upstream	1	Minimal	Debris, no major defects observed
	282-33	282-9	East Muldoon Road south of E. 14th Ave.	12	CMP	Yes	8/20/2018	64	65	Upstream	2	Minimal	Surface corrosion, minor debris, downstream invert probed, metal appeared sound
	282-10	282-9	West Muldoon Road north of E. 16th Ave.	24	RCP	Yes	7/31/2018	300	302	Upstream	4	Minimal	Rebar exposed in upstream end, crack and holes at 250 LF, broken pipe

CR NHS Storm Drain Condition Report
Proj. No. 0A31055 / Z591280000

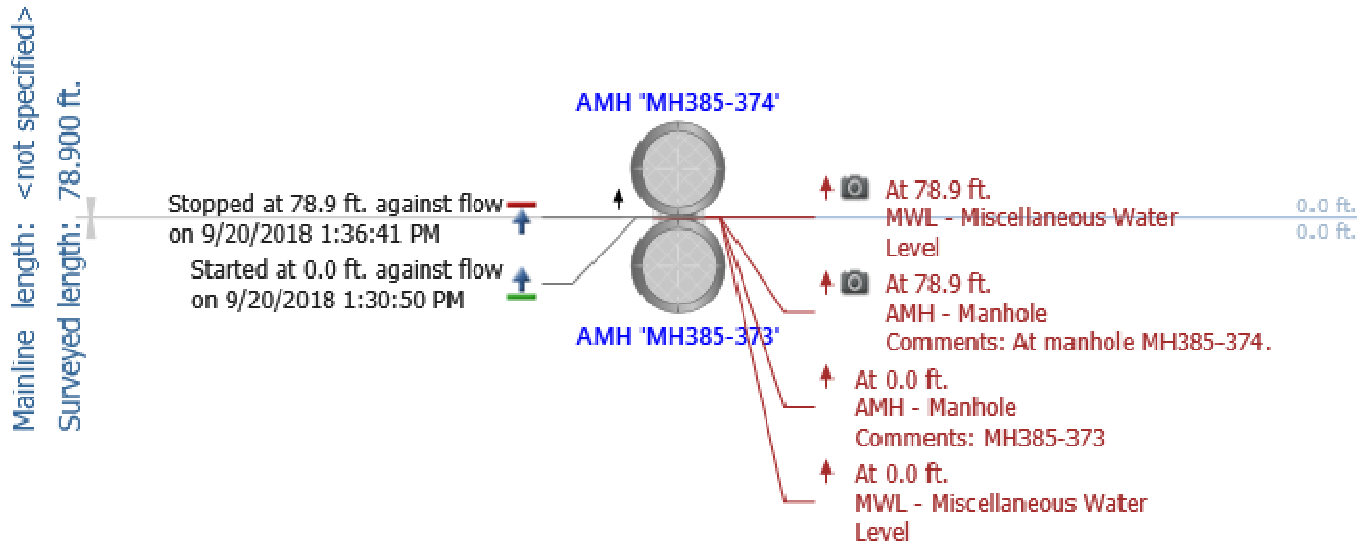
	NHS Storm Drain Inspections			Defect grades: 0=No Defect, 1=Minor Defect, 2=Minor to Moderate Defect, 3=Moderate Defect, 4=Significant Defect, 5=Most Significant Defect									
	Muldoon Road (Boundary Ave. to Northern Lights)												
		Avg. Height	Material	Condition of Components									
Page # in Appendix A	Upstream Structure No.	Downstream Structure No.	Location	Pipe Dia. (in.)	Material	CCTV Complete	CCTV Date	CCTV Length (ft.)	GIS Length (ft.)	CCTV Direction	General Condition Grade Score	Flow Depth (in.)	Additional Comments
11	282-11	282-10	East Muldoon Road north of E. 16th Ave.	12	CMP	Yes	8/20/2018	63	67	Upstream	3	Minimal	Surface corrosion, debris, downstream invert probed, evidence of corrosion
	282-13	282-10	West Muldoon north of E. 16th Ave.	24	RCP	Yes	7/31/2018	66	69	Downstream	1	0-1"	Debris, no major defects observed
	282-14	282-13	Muldoon north of E. 16th Ave.	12	CMP	Yes	8/20/2018	63	68	Upstream	2	Minimal	Minor surface corrosion, downstream invert probed, metal sound
	282-13B	282-13	West Muldoon Road at E. 16th Ave.	18	CMP	Yes	7/31/2018	111	112	Downstream	3	Minimal	Downstream invert probed, metal sound, major surface corrosion observed, minor debris
	282-20	282-13B	West Muldoon Road south of E. 16th Ave.	18	CMP	Yes	7/31/2018	158	164	Upstream/Downstream	4	0-1"	Both directions inspected, hole in downstream end, repaired by DOT in Aug. 2018, upstream invert probed and metal loss observed, surface corrosion throughout pipe
	282-31	282-20	Muldoon Road north of Island Drive	12	CMP	Yes	8/20/2018	63	60	Upstream	3	Minimal	Downstream invert probed, surface corrosion in invert and throughout pipe
12	282-21	282-20	West Muldoon Road at Island Drive	18	CMP	Yes	8/20/2018	275	276	Downstream	3	0-1"	Downstream invert probed, surface corrosion in invert and throughout pipe
	282-22	282-21	Muldoon Road at Island Drive	12	CMP	Yes	8/20/2018	64	65	Upstream	3	0-1"	Surface corrosion, debris
	282-23	282-21	West Muldoon Road south of Island Drive	18	CMP	Yes	8/20/2018	263	264	Downstream	2	0-1"	Upstream invert probed, metal sound, surface corrosion throughout pipe
	282-24	282-23	Muldoon Road south of Island Drive	12	CMP	Yes	8/20/2018	60	66	Upstream	2	1-2"	Downstream invert probed, metal appeared sound, inspection stopped by debris, surface corrosion
	282-25	282-23	West Muldoon Road south of Island Drive	18	CMP	Yes	8/20/2018	324	325	Upstream	2	1-2"	Downstream invert probed, minor surface corrosion
13	282-28	282-25	West Muldoon Road at E. 20th Ave.	18	CMP	Yes	7/20/2018	279	279	Downstream	2	None	Upstream invert probed, metal sound, surface corrosion in invert down pipe, minor debris
	282-29	282-28	West Muldoon Road at E. 20th Ave.	18	CMP	Yes	7/20/2018	292	293	Upstream	2	Minimal	Minor deformations, surface corrosion in invert, minimal debris
15	3-55	3-52	West Muldoon Road north of Halligan St.	18	DIP	Yes	7/20/2018	256	257	Upstream	2	1-2"	Surface corrosion, debris, no major defects
	3-52	3-50	West Muldoon Road at Halligan St.	24	RCP	Yes	7/20/2018	225	226	Downstream	1	0-1"	Minimal debris and flow, minor cracks
	3-51	3-50	Muldoon Road north of Eastbrook Drive	12	CMP	Yes	7/23/2018	64	72	Upstream	2	0-1"	Minor surface corrosion, debris, multiple minor deformations

CR NHS Storm Drain Condition Report
Proj. No. 0A31055 / Z591280000

	NHS Storm Drain Inspections			Defect grades: 0=No Defect, 1=Minor Defect, 2=Minor to Moderate Defect, 3=Moderate Defect, 4=Significant Defect, 5=Most Significant Defect									
	Muldoon Road (Boundary Ave. to Northern Lights)												
		Avg. Height	Material	Condition of Components									
Page # in Appendix A	Upstream Structure No.	Downstream Structure No.	Location	Pipe Dia. (in.)	Material	CCTV Complete	CCTV Date	CCTV Length (ft.)	GIS Length (ft.)	CCTV Direction	General Condition Grade Score	Flow Depth (in.)	Additional Comments
15	3-49	3-50	West Muldoon Road north of Eastbrook Drive	12	CMP	Yes	7/23/2018	60	61	Upstream	1	Minimal	Debris, no major defects observed
16	3-50	3-47	West Muldoon Road at Eastbrook Drive	24	RCP	Yes	7/20/2018	223	224	Upstream	2	Minimal	Multiple cracks, hole in pipe, rebar exposed in downstream end, no major structural defects
	3-48	3-47	Muldoon Road south of Eastbrook Drive	12	CMP	Yes	7/23/2018	61	65	Upstream	3	Varies	Discoloration and surface corrosion, debris, varied levels of flow
	3-47	3-45	West Muldoon Road south of Eastbrook Drive	24	RCP	Yes	7/20/2018	258	259	Downstream	2	0-1"	Multiple cracks and debris
	3-46	3-45	Muldoon Road south of Eastbrook Drive	12	CMP	Yes	7/23/2018	62	65	Upstream	4	None	Surface corrosion, debris, corrosion hole in pipe at upstream end
	3-45	3-28	West Muldoon Road north of Ptarmigan Court	24	RCP	Yes	7/20/2018	257	257	Upstream	1	1-2"	No grout on downstream connection, debris, crack in pipe
17	3-28	3-27	Muldoon Road north of Ptarmigan Court	36	RCP	No	7/20/2018	13	67	Downstream	1	2-3"	Incomplete due to debris, no major defects observed, rebar exposed at 11 LF
	3-29	3-28	West Muldoon Road at Ptarmigan Court	30	CMP	Yes	7/20/2018	106	110	Upstream	3	Minimal	Pipe crush, surface corrosion, multiple deformations, minor debris
	3-44	3-29	Muldoon Road south of Ptarmigan Court	18	CMP	Yes	7/23/2018	67	67	Upstream	3	None	Surface corrosion, perforated pipe material used for half of pipe
	3-30	3-29	West Muldoon Road at Carrs Muldoon Access Road	30	CMP	Yes	7/20/2018	208	207	Downstream	3	Minimal	Hole in bottom of upstream invert, surface corrosion, minimal debris
	3-31	3-30	Muldoon Road at Carrs Muldoon Access Road	12	CMP	Yes	7/23/2018	64	69	Upstream	3	None	Downstream invert probed, metal loss observed, surface corrosion, debris
	3-32	3-30	Muldoon Road at Carrs Muldoon Access Road	24	CMP	Yes	7/20/2018	31	35	Downstream	3	Minimal	Minimal debris and flow, corrosion, inverts probed, metal loss downstream, metal sound upstream
	3-33	3-32	West Muldoon Road south of Carrs Muldoon Access Road	24	CMP	Yes	7/20/2018	327	326	Upstream	2	Minimal	Surface corrosion, downstream invert probed, metal appeared sound, debris in pipe
18	3-33A	3-33	West Muldoon Road north of Northern Lights Blvd.	18	CMP	No	N/A	N/A	10	N/A	1	None	Downstream grout missing, pipe photographed, no defects observed
	3-43	3-33	Muldoon Road north of Northern Lights Blvd.	12	CMP	Yes	7/23/2018	64	75	Upstream	3	Minimal	Corrosion in invert, corrosion with metal loss, debris
	3-34	3-33	West Muldoon Road at Northern Lights Blvd.	24	CMP	Yes	7/23/2018	346	346	Upstream	2	Minimal	Minimal debris, surface corrosion in bottom of pipe, no holes observed, no major structural defects

Main Inspections Pipe Run

Project name:	Mainline ID:	City:	Street:
Muldoon CCTV 2018	385-374 to 385-373	Anchorage	Muldoon
Start date/time:	Direction:	Weather:	Location code:
9/20/2018 1:30 PM	U		
Shape:	Material:	Height:	Width:
C	CMP	12 in.	

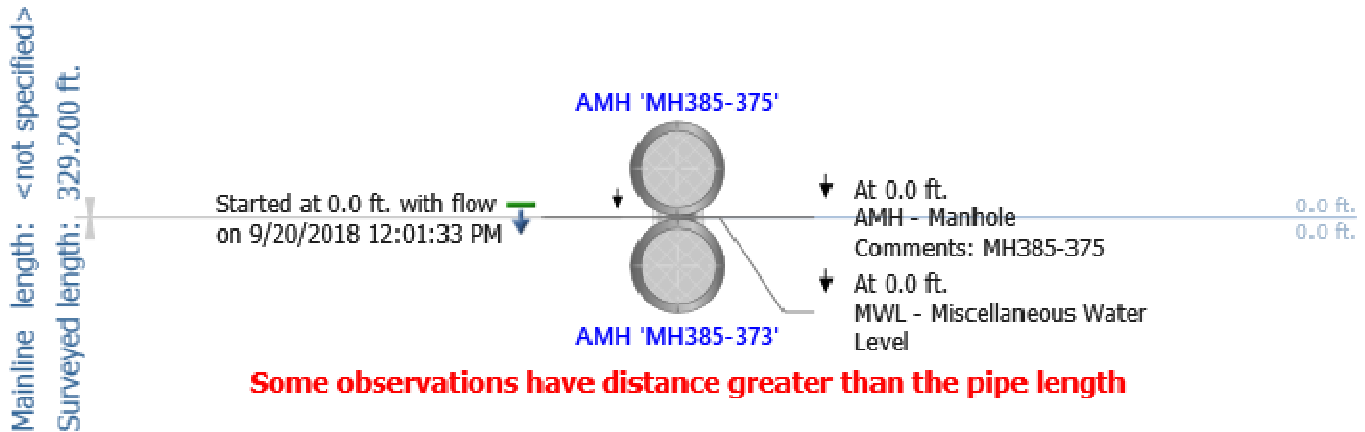


Notes: 385-374 to 385-373

- 12-in. CMP
- 79 LF
- Discoloration, 5:00 to 7:00 position
- 0-2" debris
- Corrosion visible in invert
- Surface corrosion on pipe ends at joints
- Flow: Minimal
- Grade score of: 3

Main Inspections Pipe Run

Project name:	Mainline ID:	City:	Street:
Muldoon CCTV 2018	MH385-375 - MH385-373	Anchorage	Muldoon
Start date/time:	Direction:	Weather:	Location code:
9/20/2018 12:01 PM	D		
Shape:	Material:	Height:	Width:
C	CP	24 in.	

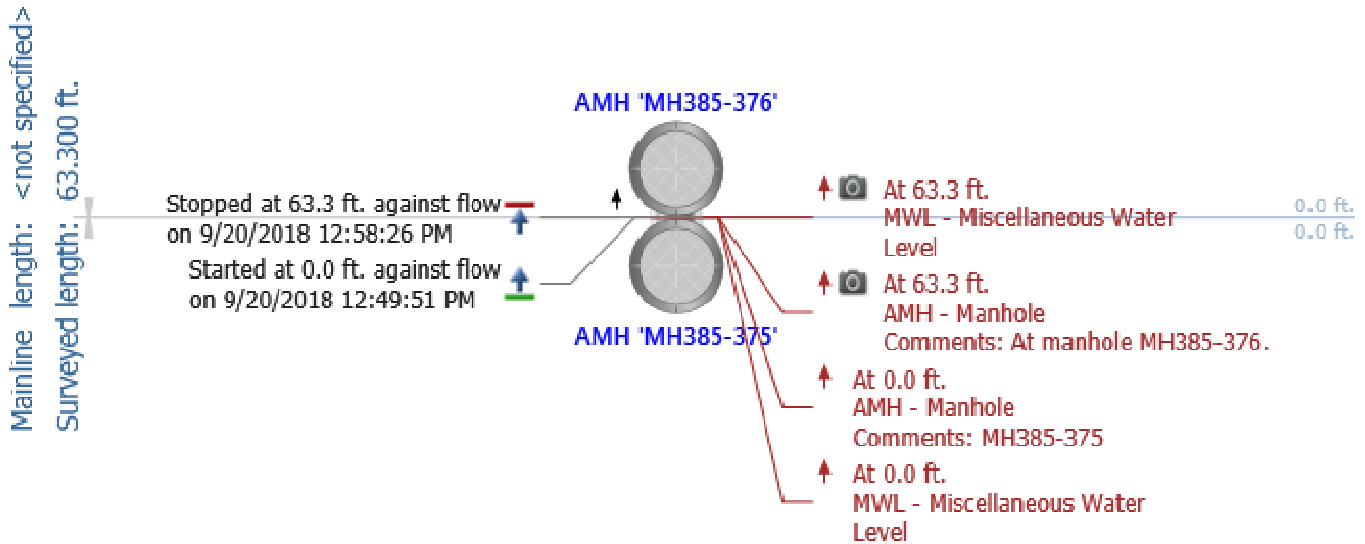


Notes: 385-375 to 385-373

- 24-in. RCP
- 329 LF
- 0-1" debris
- Crack in 11:00 position, 70 LF, 101 LF
- Cracks, 180 LF to approximately 188 LF in 9:00 11:00, and 12:00 position
- Crack in 1:00 position 191 LF to 193 LF
- Circumferential crack, 328 LF
- Flow: 1-2"
- Grade score of: 2

Main Inspections Pipe Run

Project name:	Mainline ID:	City:	Street:
Muldoon CCTV 2018	385-376 to 385-375	Anchorage	Muldoon
Start date/time:	Direction:	Weather:	Location code:
9/20/2018 12:49 PM	U		
Shape:	Material:	Height:	Width:
C	CMP	12 in.	

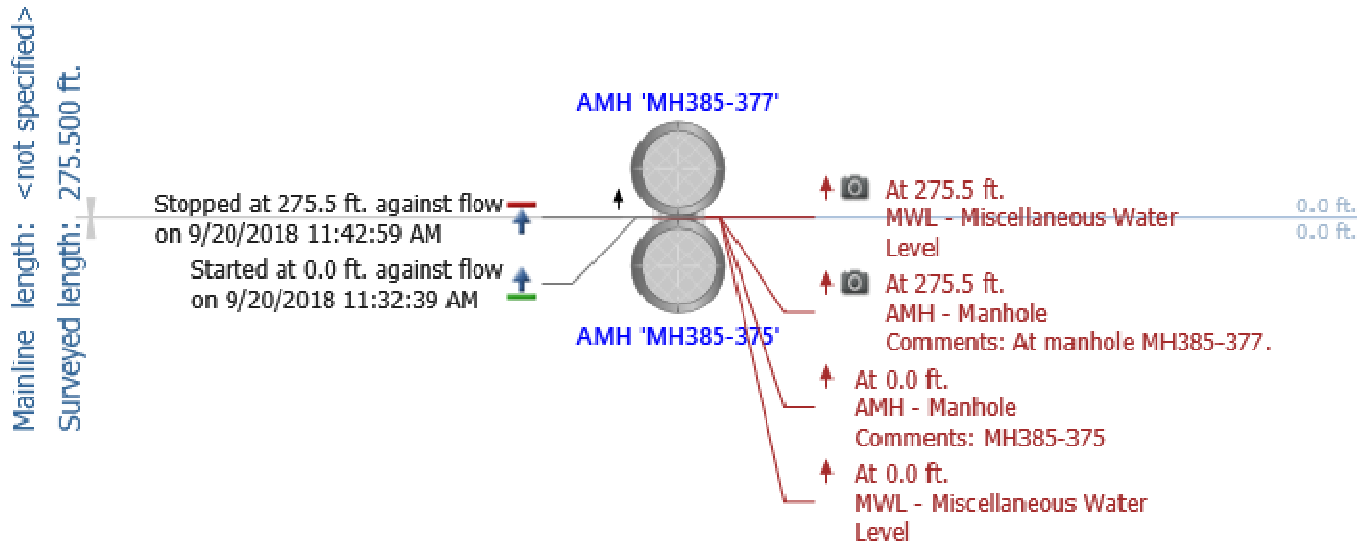


Notes: 385-376 to 385-375

- 12-in. CMP
- 63 LF
- Approximately 1" debris in pipe
- Surface corrosion on pipe ends at joints
- Camera stopped by debris at 63 LF, surface corrosion visible in 3:00 and 9:00 position upstream
- Unable to evaluate condition of invert
- Flow: None
- Grade score of: 2

Main Inspections Pipe Run

Project name:	Mainline ID:	City:	Street:
Muldoon CCTV 2018	385-377 to 385-375	Anchorage	Muldoon
Start date/time:	Direction:	Weather:	Location code:
9/20/2018 11:32 AM	U		
Shape:	Material:	Height:	Width:
C	CP	24 in.	

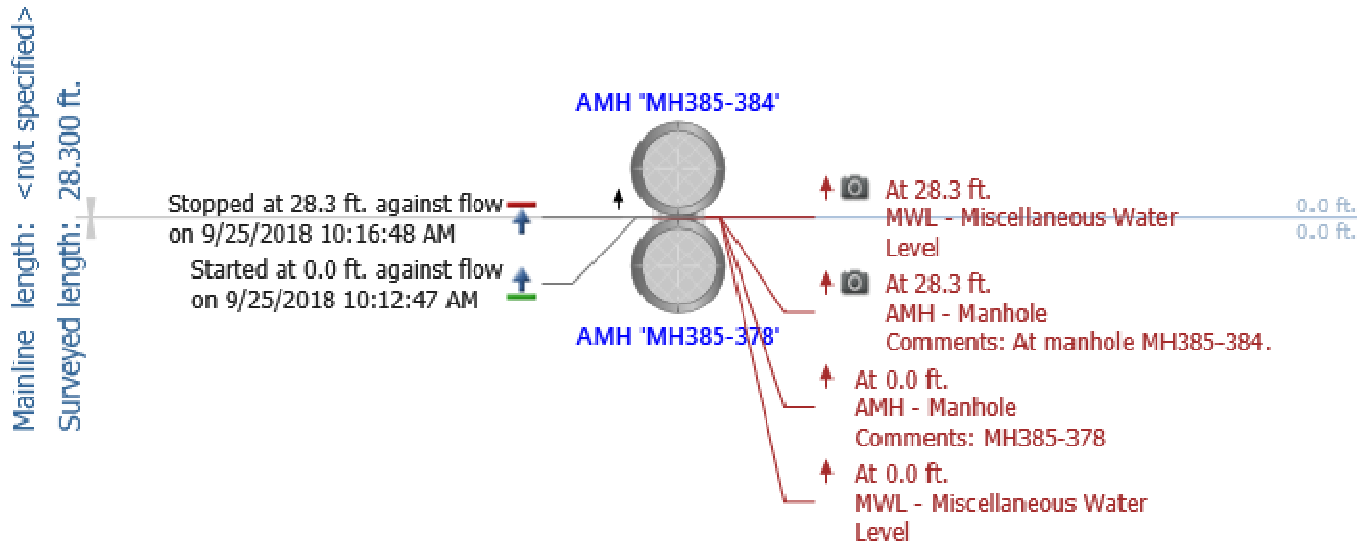


Notes: 385-377 to 385-375

- 24-in. RCP
- 276 LF
- Minimal debris in pipe
- No major defects observed
- Flow: 1-2"
- Grade score of: 1

Main Inspections Pipe Run

Project name:	Mainline ID:	City:	Street:
Muldoon CCTV 2018	385-384 to 385-378	Anchorage	Muldoon
Start date/time:	Direction:	Weather:	Location code:
9/25/2018 10:12 AM	U		
Shape:	Material:	Height:	Width:
C	CMP	12 in.	

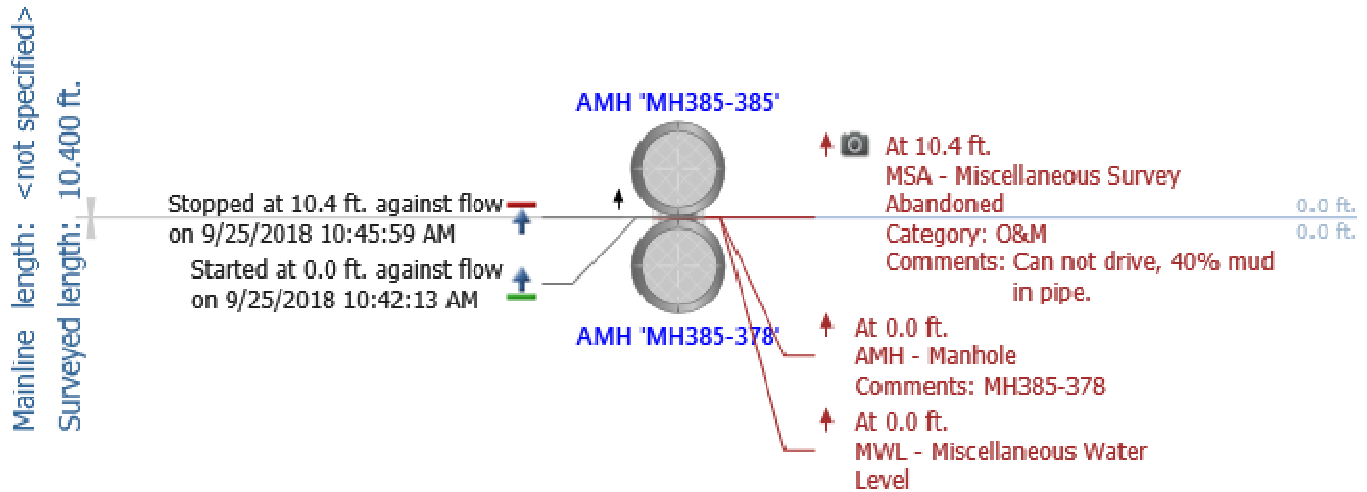


Notes: 385-384 to 385-378

- 12-in. CMP
- 28 LF
- Surface corrosion visible in 4:00 and 8:00 position
- Belly/sag in pipe at approximately 15 LF (midspan), pipe becomes half full with water
- Flow: 1-6"
- Grade score of: 4

Main Inspections Pipe Run

Project name:	Mainline ID:	City:	Street:
Muldoon CCTV 2018	385-385 to 385-378	Anchorage	Muldoon
Start date/time:	Direction:	Weather:	Location code:
9/25/2018 10:42 AM	U		
Shape:	Material:	Height:	Width:
C	CMP	12 in.	

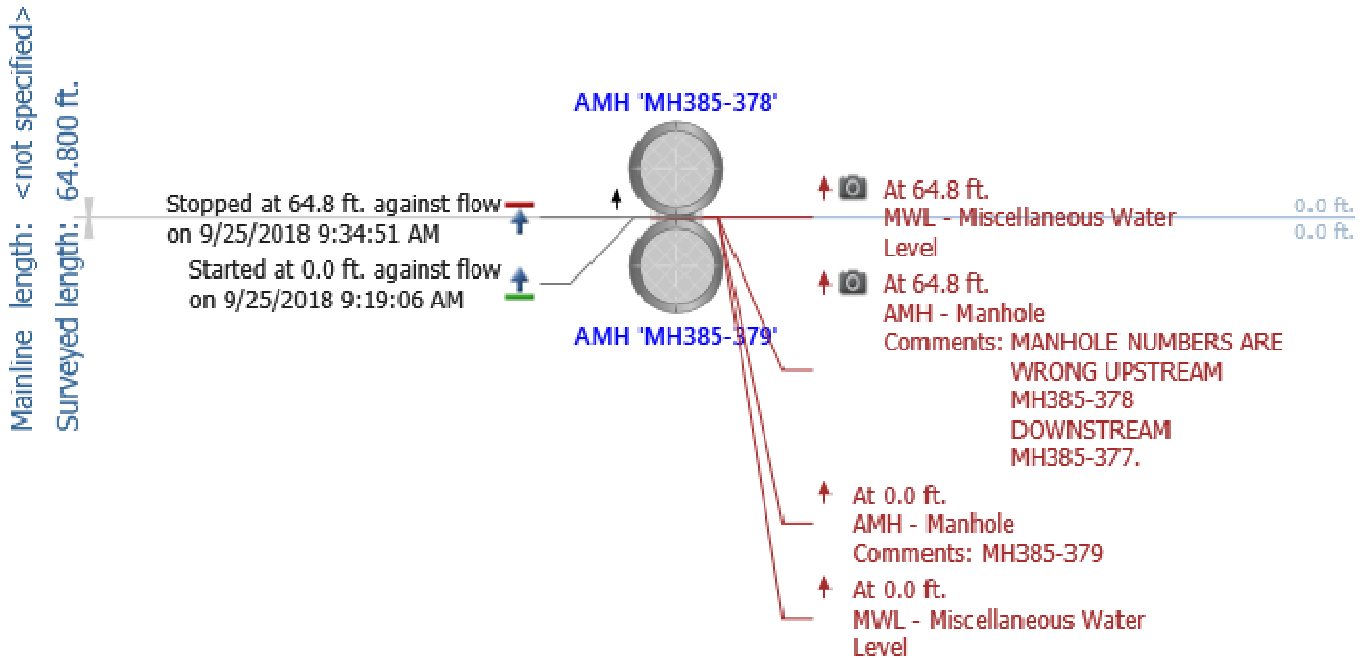


Notes: 385-385 to 385-378

- 12-in. CMP
- 31 LF
- 2-3" debris at downstream end, camera stopped by debris at 10 LF, possible belly in pipe
- Surface corrosion at flow line
- Clean pipe to determine invert condition
- Flow: 2-3"
- Grade score of: 3

Main Inspections Pipe Run

Project name:	Mainline ID:	City:	Street:
Muldoon CCTV 2018	385-378 to 385-377	Anchorage	Muldoon
Start date/time:	Direction:	Weather:	Location code:
9/25/2018 9:19 AM	U		
Shape:	Material:	Height:	Width:
C	CMP	18 in.	

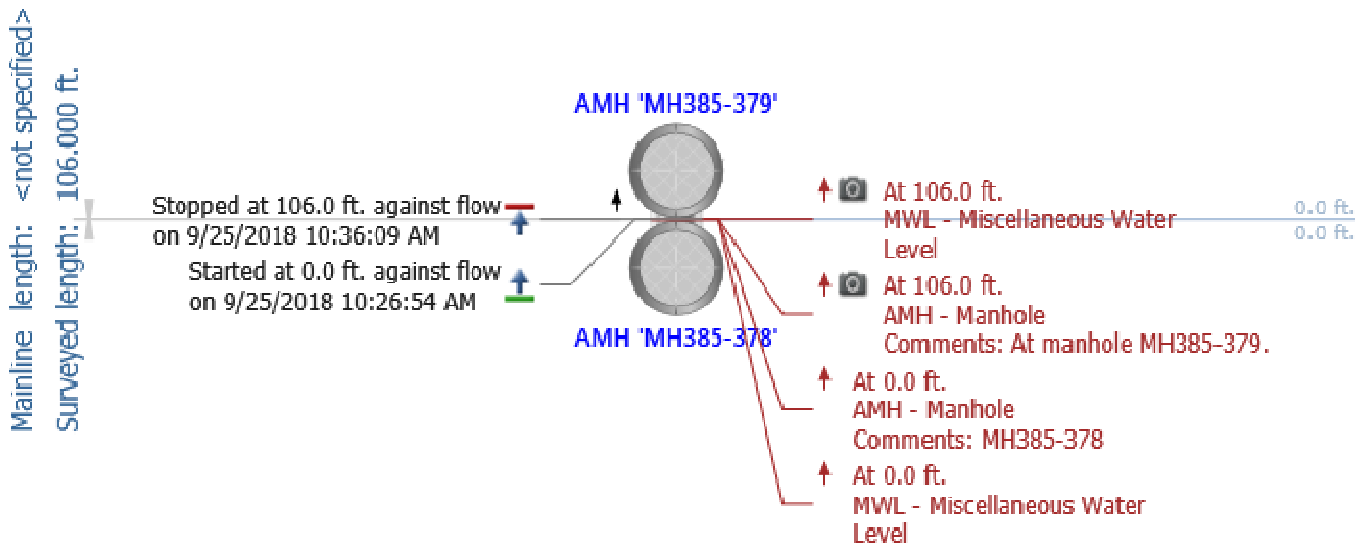


Notes: 385-378 to 385-377

- 18-in. CMP
- 65 LF
- 1-2" of debris, debris pile in downstream end flattened by camera
- Evidence of corrosion in invert, pipe requires cleaning to confirm degree
- Flow: Minimal
- Grade score of: 2

Main Inspections Pipe Run

Project name:	Mainline ID:	City:	Street:
Muldoon CCTV 2018	385-379 to 385-378	Anchorage	Muldoon
Start date/time:	Direction:	Weather:	Location code:
9/25/2018 10:26 AM	U		
Shape:	Material:	Height:	Width:
C	CMP	12 in.	

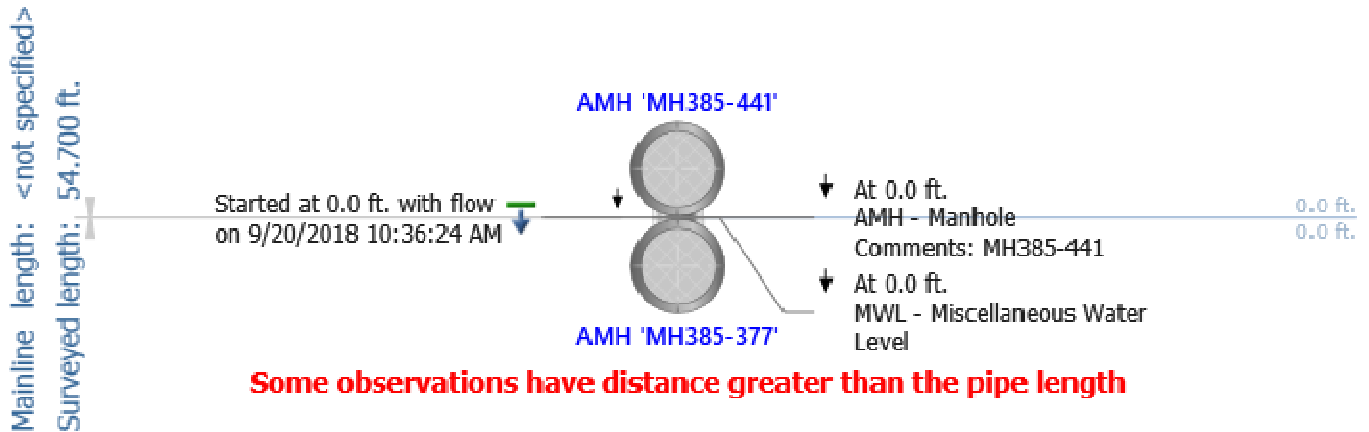


Notes: 385-379 to 385-378

- 12-in. CMP
- 106 LF
- Various levels of debris throughout pipe, 0-3"
- Debris on top of pipe, 36 LF
- Surface corrosion visible in 5:00 and 7:00 position
- Evidence of infiltration at joint 102 LF
- Invert obscured by debris throughout pipe, corrosion visible at upstream end, likely corrosion in invert throughout pipe
- Flow: 0-1"
- Grade score of: 3

Main Inspections Pipe Run

Project name:	Mainline ID:	City:	Street:
Muldoon CCTV 2018	385-441 to 385-377	Anchorage	Muldoon
Start date/time:	Direction:	Weather:	Location code:
9/20/2018 10:36 AM	D		
Shape:	Material:	Height:	Width:
C	DIP	18 in.	

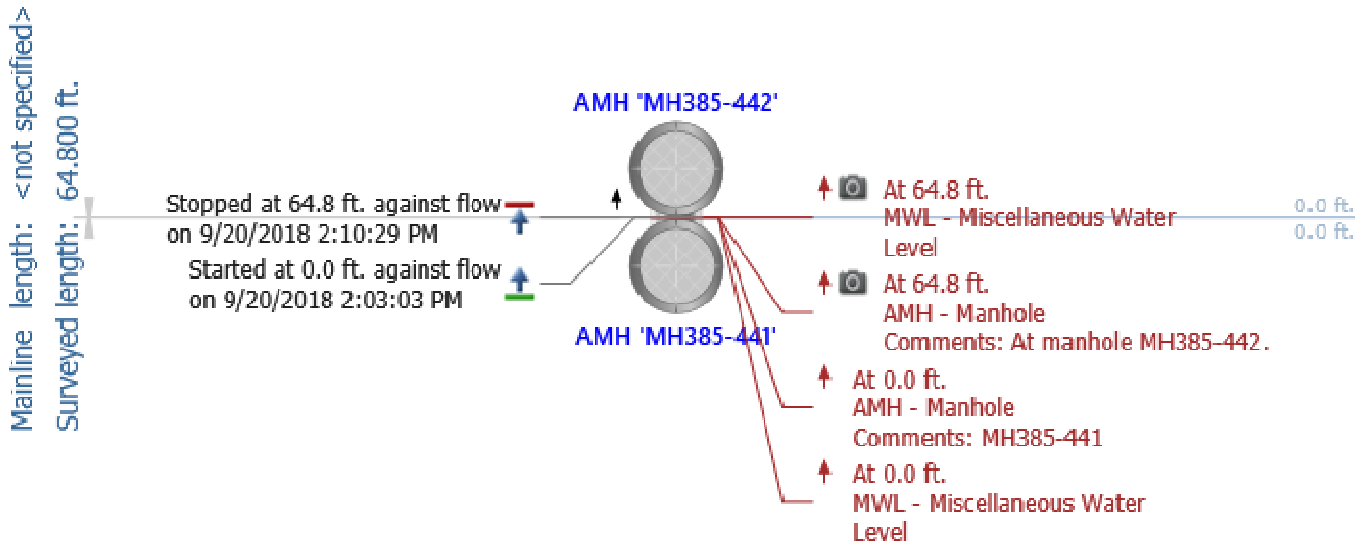


Notes: 385-441 to 385-377

- 18-in. DIP
- 55 LF
- Surface corrosion at pipe ends at joints
- 1-2" debris in pipe
- Corrosion spot, 39 LF in 1:00 position
- Unable to observe invert due to debris
- Flow: Minimal
- Grade score of: 2

Main Inspections Pipe Run

Project name:	Mainline ID:	City:	Street:
Muldoon CCTV 2018	385-442 to 385-441	Anchorage	Muldoon
Start date/time:	Direction:	Weather:	Location code:
9/20/2018 2:03 PM	U		
Shape:	Material:	Height:	Width:
C	CMP	12 in.	

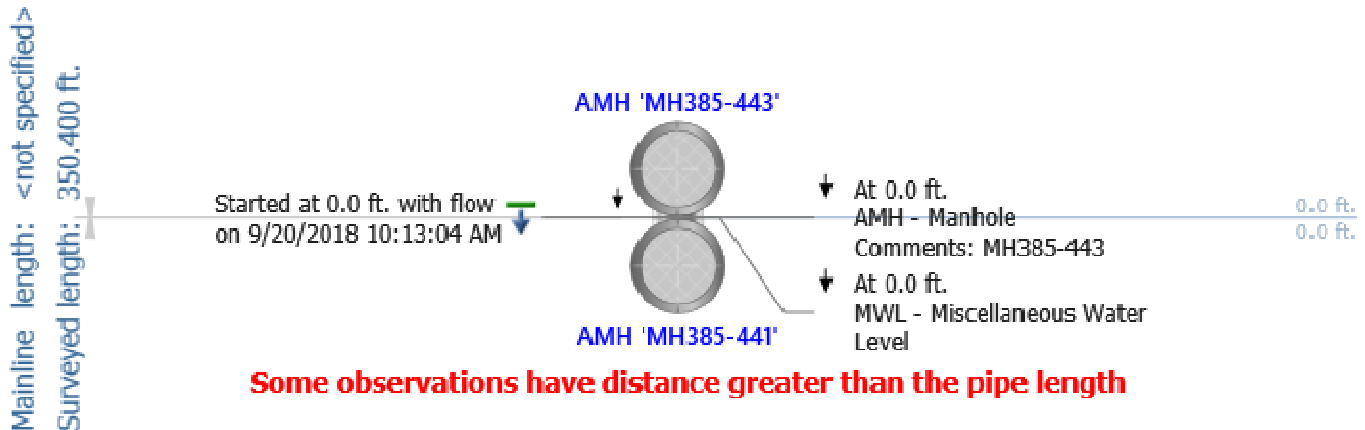


Notes: 385-442 to 385-441

- 12-in. CMP
- 65 LF
- 0-1" of debris, 1-2" at 53 LF
- Surface corrosion spot, 4:00 position at 15 LF, 50 LF
- Surface corrosion visible in invert
- Surface corrosion, 3:00 and 9:00 position 54 LF to 62 LF
- Surface corrosion visible at pipe ends at joints
- Flow: None
- Grade score of: 2

Main Inspections Pipe Run

Project name:	Mainline ID:	City:	Street:
Muldoon CCTV 2018	MH385-443 - MH385-441	Anchorage	Muldoon
Start date/time:	Direction:	Weather:	Location code:
9/20/2018 10:13 AM	D		
Shape:	Material:	Height:	Width:
C	DIP	18 in.	

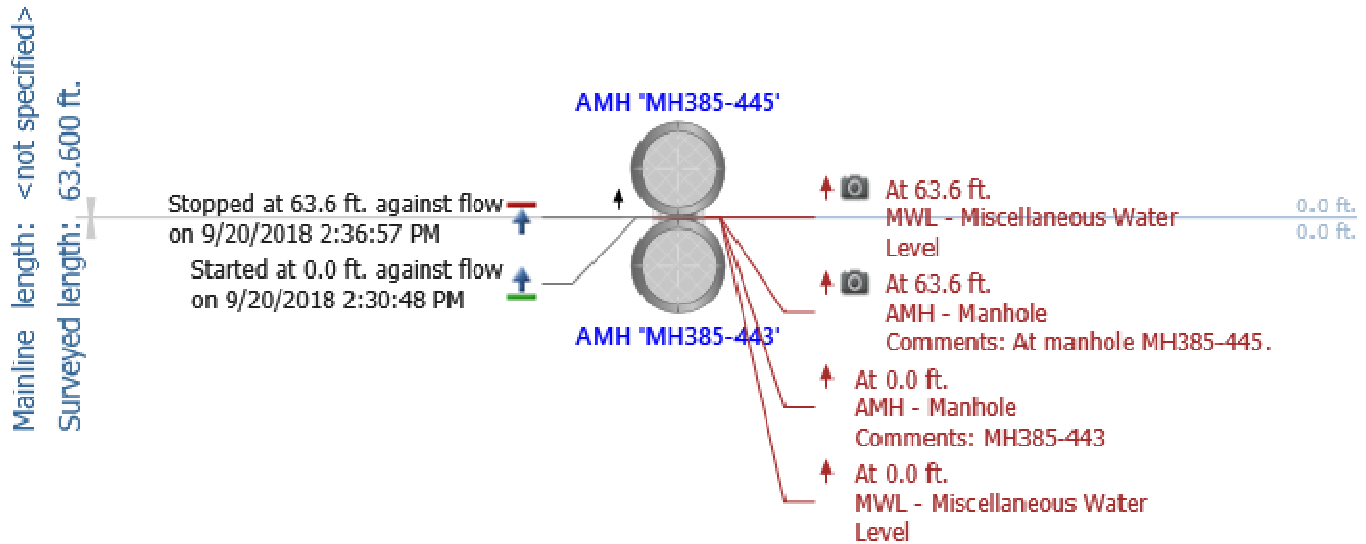


Notes: 385-443 to 385-441

- 18-in. DIP
- 350 LF
- 0-1" debris, 2" debris 285 LF to 297 LF, debris buildup at 297 LF, 0-1" 297 LF to end of pipe
- Evidence of minor surface corrosion in invert, invert probed, metal appeared sound
- Surface corrosion visible at pipe ends at joints
- Flow: 0-1"
- Grade score of: 2

Main Inspections Pipe Run

Project name:	Mainline ID:	City:	Street:
Muldoon CCTV 2018	385-445 to 385-443	Anchorage	Muldoon
Start date/time:	Direction:	Weather:	Location code:
9/20/2018 2:30 PM	U		
Shape:	Material:	Height:	Width:
C	CMP	12 in.	

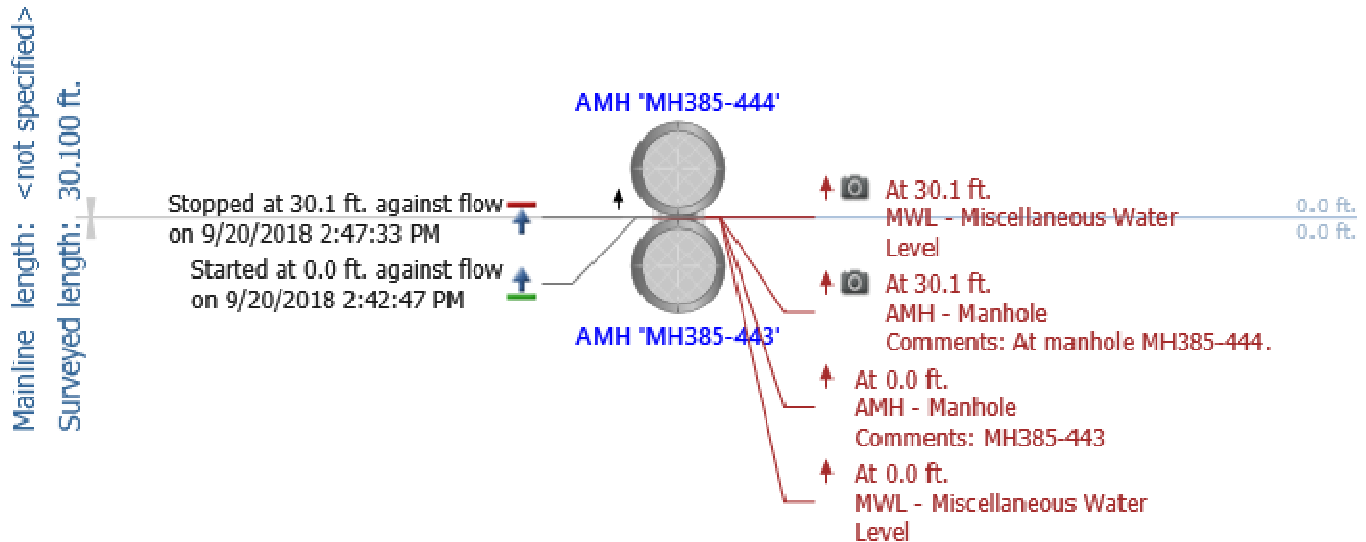


Notes: 385-445 to 385-443

- 12-in. CMP
- 64 LF
- 0-1" debris, 2-3" at upstream end, camera unable to pass at 64 LF
- Surface corrosion visible at pipe end at joint
- Evidence of minor service corrosion visible in invert, invert obscured by debris throughout pipe
- Clean pipe to observe invert
- Flow: None
- Grade score of: 1

Main Inspections Pipe Run

Project name:	Mainline ID:	City:	Street:
Muldoon CCTV 2018	385-444 to 385-443	Anchorage	Muldoon
Start date/time:	Direction:	Weather:	Location code:
9/20/2018 2:42 PM	U		
Shape:	Material:	Height:	Width:
C	CMP	12 in.	



Notes: 385-444 to 385-443

- 12-in. CMP
- 30 LF
- 0-1" debris, 1-2" debris 14 LF, debris buildup approximately 4" at joint 21 LF, 1-2" debris 21 LF to end of pipe
- No major defects observed
- Pipe invert mostly obscured with debris, discoloration visible when debris is minimal
- Flow: Minimal
- Grade score of: 1



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3600 Rio Vista Avenue
Orlando, FL 32805
Phone: 407-849-0190
Fax: 407-425-1569

Main Inspections Pipe Run

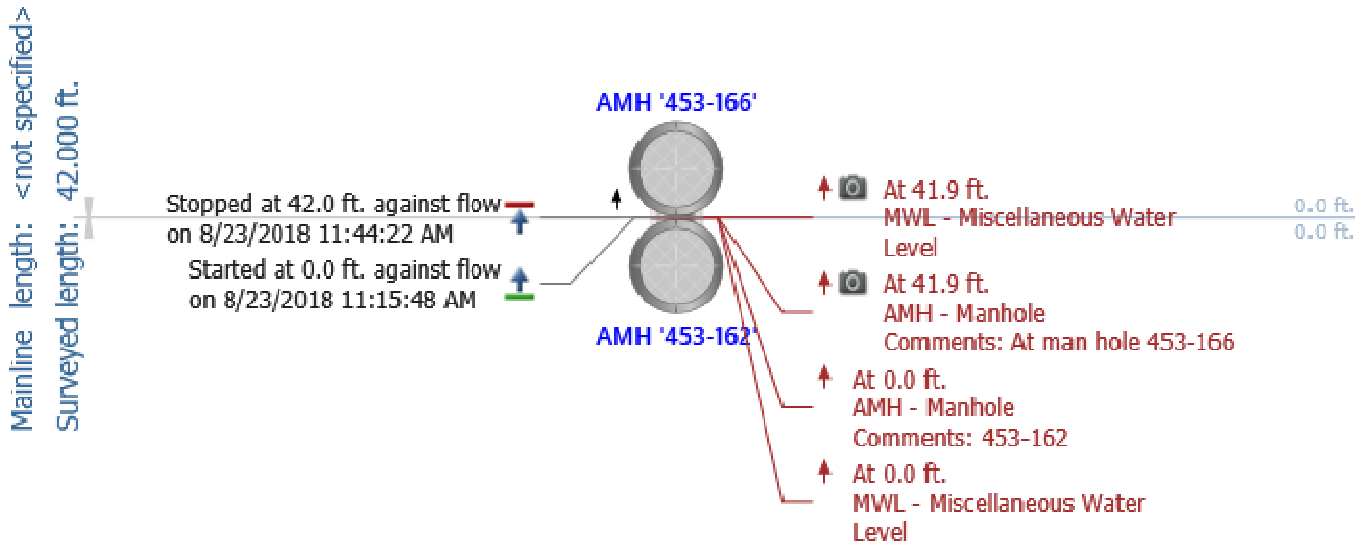
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Start date/time:	Direction:	Weather:	Location code:
8/22/2018 9:47 AM	U		
Shape:	Material:	Height:	Width:
C	CPEP	18 in.	

Notes: 453-163 to 453-162

- 18-in. CPEP
- 17 LF
- 0-1" of debris
- No major defects
- Flow: 1-2"
- Grade score of: 1

Main Inspections Pipe Run

Project name:	Mainline ID:	City:	Street:
Muldoon CCTV 2018	453-166 to 453-162	Anchorage	Muldoon Rd
Start date/time:	Direction:	Weather:	Location code:
8/23/2018 11:15 AM	U		
Shape:	Material:	Height:	Width:
C	CMP	12 in.	



Notes: 453-166 to 453-162

- 12-in. CMP
- 42 LF
- Various debris throughout pipe, 0-2"
- Pipes segments offset at joint, 1-2" in 3:00 to 6:00 position
- Minor surface corrosion at pipe ends at joints
- Surface corrosion, 4:00 and 8:00 position 21 LF to end of pipe
- Downstream invert probe, metal appeared sound
- Flow: 0-1"
- Grade score of: 2



CUES, Inc.
3600 Rio Vista Avenue
Orlando, FL 32805
Phone: 407-849-0190
Fax: 407-425-1569

Main Inspections Pipe Run

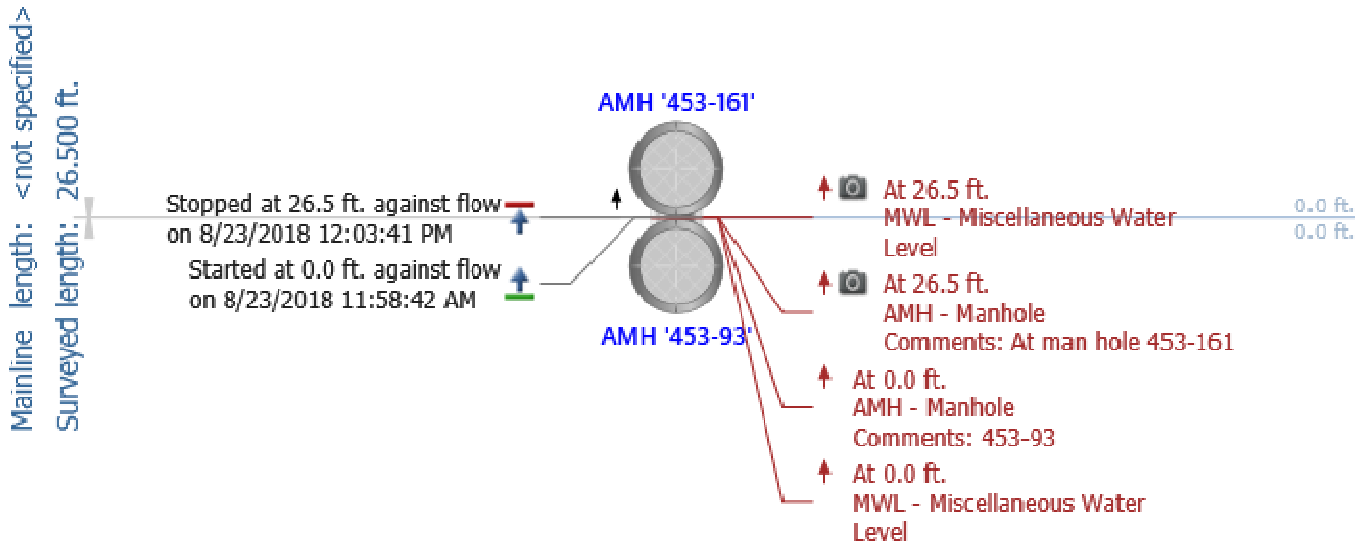
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Muldoon CCTV 2018	453-162 to 453-93	Anchorage	Muldoon
Start date/time:	Direction:	Weather:	Location code:
8/22/2018 10:00 AM	D		
Shape:	Material:	Height:	Width:
C	FRP	30 in.	

Notes: 453-162 to 453-93

- 30-in. FRP
- 185 LF
- Hole in pipe, fiberglass fractured, 12:00 position at approximately 3 LF
- 2-3" debris
- Possible crack in pipe, 4-5", 12:00 position at approximately 115 LF
- Flow: 2-3"
- Grade score of: 3

Main Inspections Pipe Run

Project name:	Mainline ID:	City:	Street:
Muldoon CCTV 2018	453-161 to 453-93	Anchorage	Muldoon Rd
Start date/time:	Direction:	Weather:	Location code:
8/23/2018 11:58 AM	U		
Shape:	Material:	Height:	Width:
C	CMP	12 in.	



Notes: 453-161 to 453-93

- 12-in. CMP
- 27 LF
- Evidence of corrosion in invert
- Downstream invert probed, surface corrosion observed
- Surface corrosion at pipe ends at joints
- Surface corrosion visible in 5:00 to 7:00 position at upstream end
- 2-3" debris buildup at upstream end
- Flow: 0-1"
- Grade score of: 3



CUES, Inc.
3600 Rio Vista Avenue
Orlando, FL 32805
Phone: 407-849-0190
Fax: 407-425-1569

Main Inspections Pipe Run

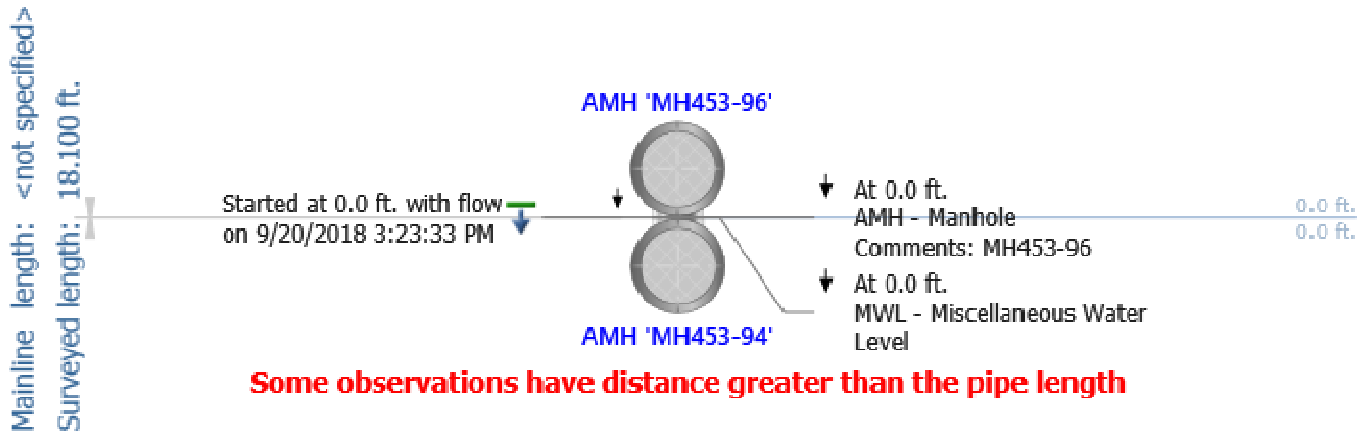
Project name:	Mainline ID:	City:	Street:
Muldoon CCTV 2018	453-94 to 453-93	Anchorage	Muldoon
Start date/time:	Direction:	Weather:	Location code:
8/22/2018 10:33 AM	U		
Shape:	Material:	Height:	Width:
C	CMP	24 in.	

Notes: 453-94 to 453-93

- 24-in. CMP
- 185 LF
- Minimal debris in pipe
- Surface corrosion at pipe ends at joints
- Surface corrosion visible in invert, downstream invert probed, metal loss observed
- Hole in upstream invert at 62 LF
- Flow: 0-1"
- Grade score of: 3

Main Inspections Pipe Run

Project name:	Mainline ID:	City:	Street:
Muldoon CCTV 2018	453-96 to 453-94	Anchorage	Muldoon
Start date/time:	Direction:	Weather:	Location code:
9/20/2018 3:23 PM	D		
Shape:	Material:	Height:	Width:
C	CMP	12 in.	



Notes: 453-96 to 453-94

- 12-in. CMP
- 18 LF
- 1-2" debris in pipe
- Invert obscured by debris
- No major defects observed
- Flow: Minimal
- Grade score of: 1



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3600 Rio Vista Avenue
Orlando, FL 32805
Phone: 407-849-0190
Fax: 407-425-1569

Main Inspections Pipe Run

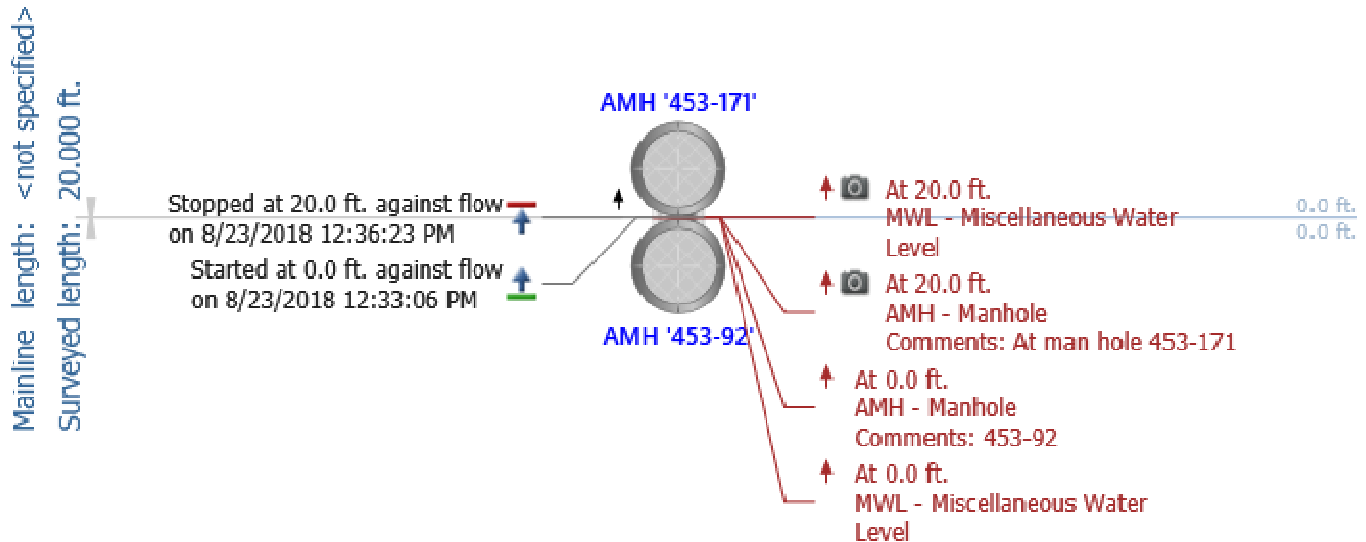
Project name:	Mainline ID:	City:	Street:
Muldoon CCTV 2018	453-93 to 453-92	Anchorage	Muldoon
Start date/time:	Direction:	Weather:	Location code:
8/22/2018 10:49 AM	D		
Shape:	Material:	Height:	Width:
C	FRP	30 in.	

Notes: 453-93 to 453-92

- 30-in. FRP
- 372 LF
- 0-1" of debris
- 2 small punctures, 84 LF 2:00 position
- No major defects
- Flow: 0-1"
- Grade score of: 1

Main Inspections Pipe Run

Project name:	Mainline ID:	City:	Street:
Muldoon CCTV 2018	453-171 to 453-92	Anchorage	Muldoon Rd
Start date/time:	Direction:	Weather:	Location code:
8/23/2018 12:33 PM	U		
Shape:	Material:	Height:	Width:
C	CMP	12 in.	

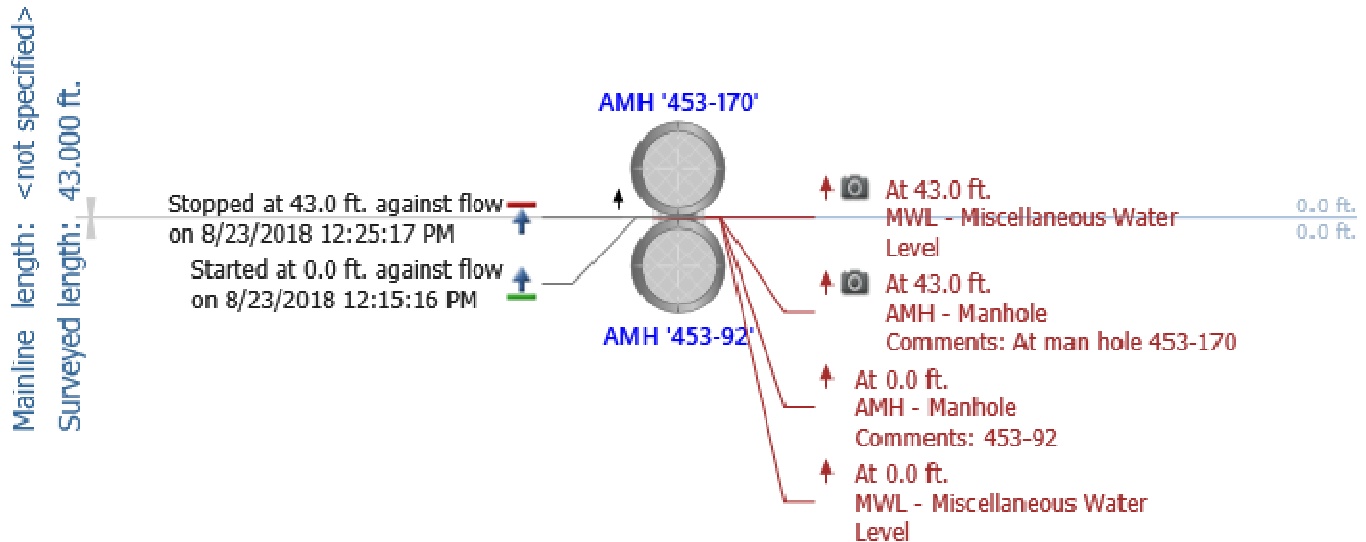


Notes: 453-171 to 453-92

- 12-in. CMP
- 20 LF
- Discoloration in bottom half of pipe
- Surface corrosion at pipe ends at joints
- Surface corrosion in 4:00 position, 13 LF to 17 LF
- Flow in pipe obscures invert, downstream invert probed, metal sound
- Flow: 1-2"
- Grade score of: 2

Main Inspections Pipe Run

Project name:	Mainline ID:	City:	Street:
Muldoon CCTV 2018	453-170 to 453-92	Anchorage	Muldoon Rd
Start date/time:	Direction:	Weather:	Location code:
8/23/2018 12:15 PM	U		
Shape:	Material:	Height:	Width:
C	CMP	12 in.	



Notes: 453-170 to 453-92

- 12-in. CMP
- 43 LF
- Surface corrosion at pipe ends at joint
- Discoloration and minor surface corrosion in 5:00 and 7:00 position, 3 LF to 30 LF, corrosion in 4:00 and 8:00 30 LF to
- Pinhole at joint, 23 LF in 12:00 position
- Minor debris in pipe, approximately 1" at upstream end
- Invert in downstream end probed, metal appeared sound
- Flow: 0-1"
- Grade score of: 2



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Main Inspections Pipe Run

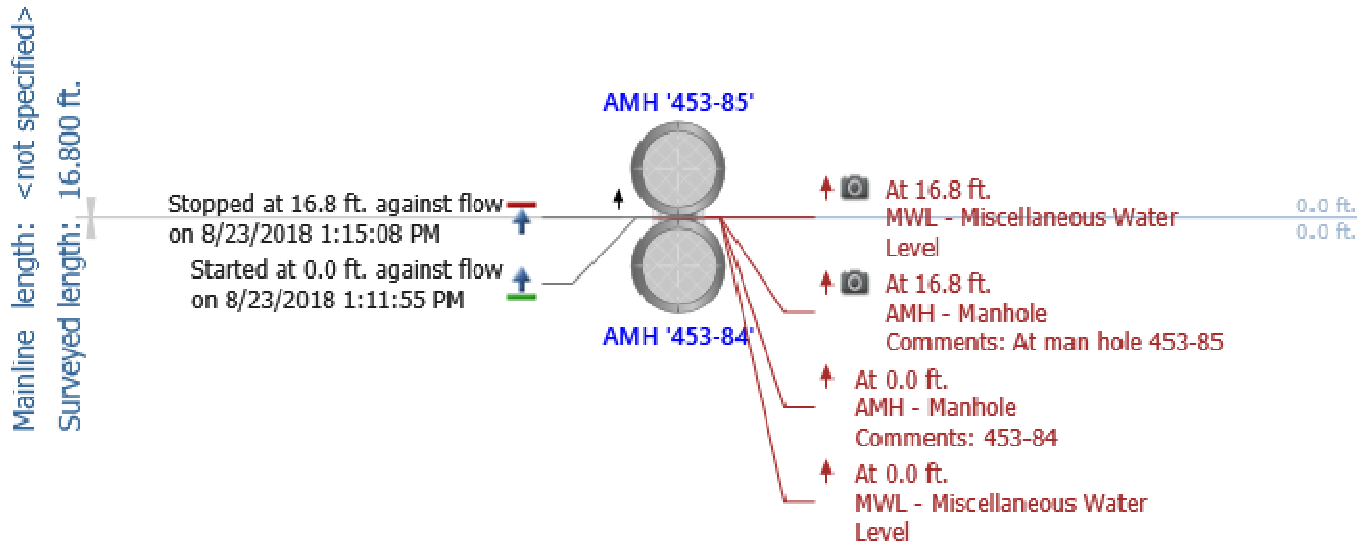
Project name:	Mainline ID:	City:	Street:
Muldoon CCTV 2018	453-92 to 453-84	Anchorage	Muldoon
Start date/time:	Direction:	Weather:	Location code:
8/22/2018 11:32 AM	U		
Shape:	Material:	Height:	Width:
C	FRP	30 in.	

Notes: 453-92 to 453-84

- 30-in. FRP
- 249 LF
- 0-1" debris
- No major defects observed
- Flow: 0-1"
- Grade score of: 1

Main Inspections Pipe Run

Project name:	Mainline ID:	City:	Street:
Muldoon CCTV 2018	453-85 to 453-84	Anchorage	Muldoon Rd
Start date/time:	Direction:	Weather:	Location code:
8/23/2018 1:11 PM	U		
Shape:	Material:	Height:	Width:
C	CMP	12 in.	

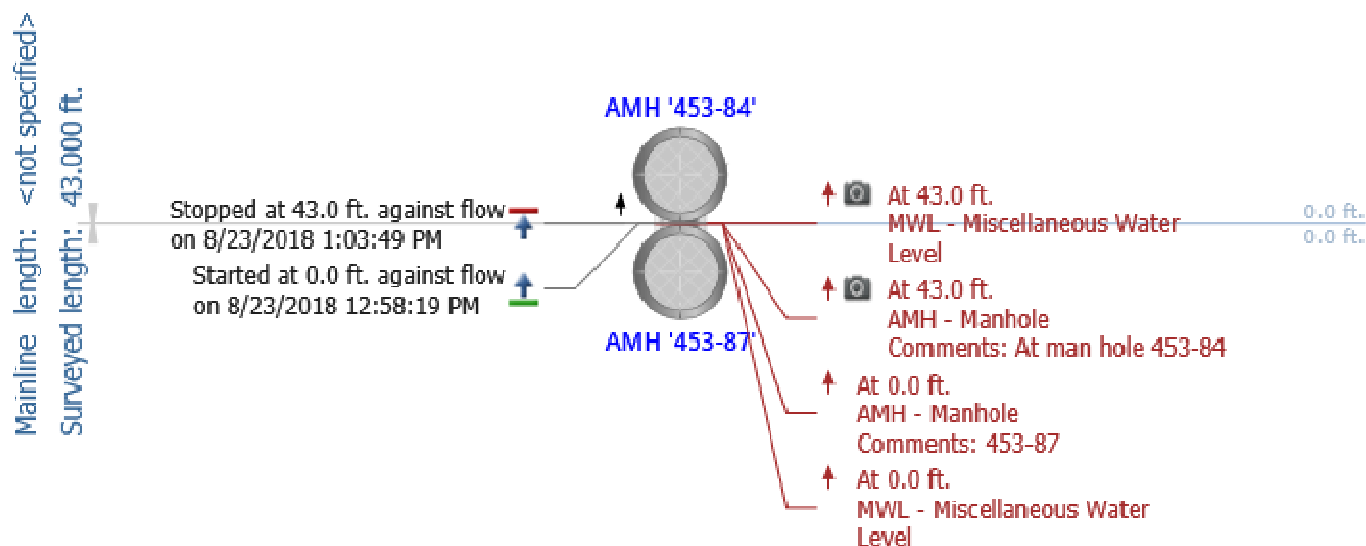


Notes: 453-85 to 453-84

- 12-in. CMP
- 17 LF
- Corrosion and metal loss in bottom half of pipe, holes with soil visible
- Downstream invert probed, metal loss observed
- 1-2" of debris and water in upstream end of pipe
- Flow: Minimal
- Grade score of: 4

Main Inspections Pipe Run

Project name:	Mainline ID:	City:	Street:
Muldoon CCTV 2018	453-87 - 453-84	Anchorage	Muldoon Rd
Start date/time:	Direction:	Weather:	Location code:
8/23/2018 12:58 PM	U		
Shape:	Material:	Height:	Width:
C	CMP	12 in.	



Notes: 453-87 to 453-84

- 12-in. CMP
- 43 LF
- Inspection during rain event
- Surface corrosion at pipe ends at joints
- Flow decreases at 19 LF to between 0" and 1", 1" flow at upstream end
- Minimal debris in invert
- Downstream invert probed, metal appeared soft
- Flow: 0-2"
- Grade score of: 3



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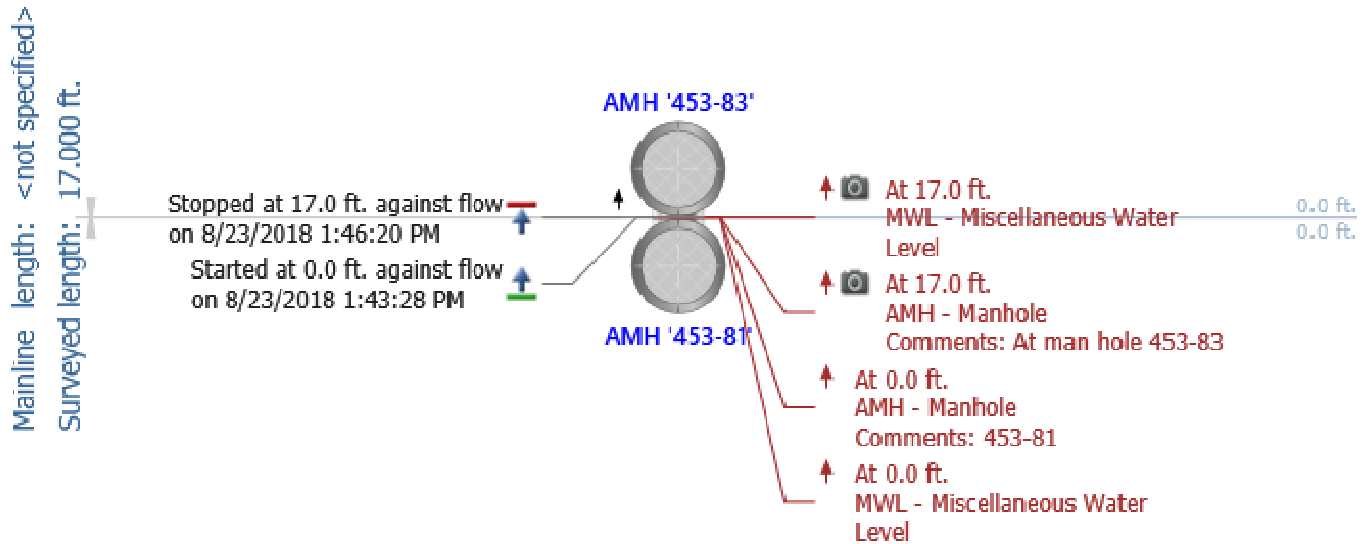
Project name:	Mainline ID:	City:	Street:
Muldoon CCTV 2018	453-84 to 453-81	Anchorage	Muldoon
Start date/time:	Direction:	Weather:	Location code:
8/22/2018 11:52 AM	D		
Shape:	Material:	Height:	Width:
C	FRP	30 in.	

Notes: 453-84 to 453-81

- 30-in. FRP
- 97 LF
- 0-1" debris in pipe
- Broken pipe, 14 LF, 3:00 position
- Broken pipe, 22 LF, 9:00 position to 2:00 position
- Broken pipe, 23 LF, 12:00 position
- Flow: 0-1"
- Grade score of: 3

Main Inspections Pipe Run

Project name:	Mainline ID:	City:	Street:
Muldoon CCTV 2018	453-83 to 453-81	Anchorage	Muldoon Rd
Start date/time:	Direction:	Weather:	Location code:
8/23/2018 1:43 PM	U		
Shape:	Material:	Height:	Width:
C	CMP	12 in.	

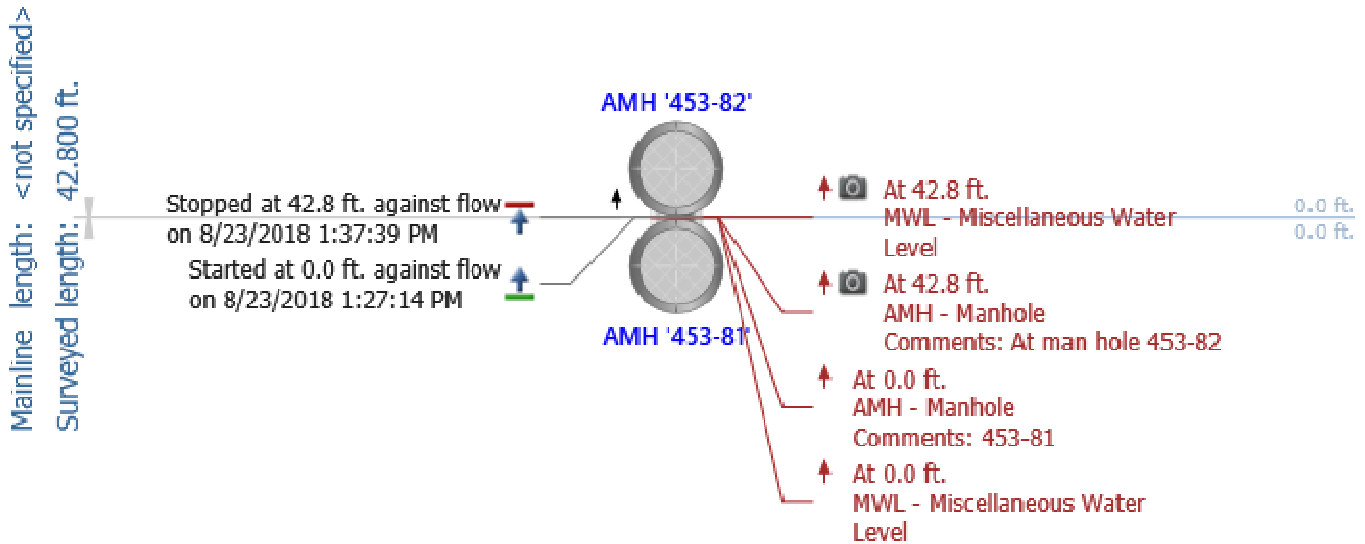


Notes: 453-83 to 453-81

- 12-in. CMP
- 17 LF
- 0-1" debris
- Surface corrosion visible in 4:00 and 8:00 position, metal loss observed at 8 LF
- Downstream invert probed, metal loss observed
- Flow: 0-1"
- Grade score of: 3

Main Inspections Pipe Run

Project name:	Mainline ID:	City:	Street:
Muldoon CCTV 2018	453-82 to 453-81	Anchorage	Muldoon Rd
Start date/time:	Direction:	Weather:	Location code:
8/23/2018 1:27 PM	U		
Shape:	Material:	Height:	Width:
C	CMP	12 in.	



Notes: 453-82 to 453-81

- 12-in. CMP
- 43 LF
- 0-1" debris
- Surface corrosion on pipe ends at joints
- Surface corrosion/discoloration, 5:00 and 7:00 18 LF, corrosion moves to 3:00 and 9:00 position at 36 LF
- Downstream invert probed, metal appeared sound
- Flow: 0-1"
- Grade score of: 2



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Main Inspections Pipe Run

Project name:	Mainline ID:	City:	Street:
Muldoon CCTV 2018	453-81 to 453-9	Anchorage	Muldoon
Start date/time:	Direction:	Weather:	Location code:
8/22/2018 12:08 PM	D		
Shape:	Material:	Height:	Width:
C	FRP	30 in.	

Notes: 453-81 to 453-9

- 30-in. FRP
- 357 LF
- 0-1" debris
- Possible crack in top of pipe, 5 LF
- Possible hole in top of pipe, 1-2", approximately 10 LF, 108 LF
- Small puncture, less than 1", 11:00 position at approximately 115 LF
- Broken/Fractured pipe, fiberglass splinters visible, 9:00 to 11:00 position at 353 LF
- Flow: 0-1"
- Grade score of: 3



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Fax: 407-425-1569

Main Inspections Pipe Run

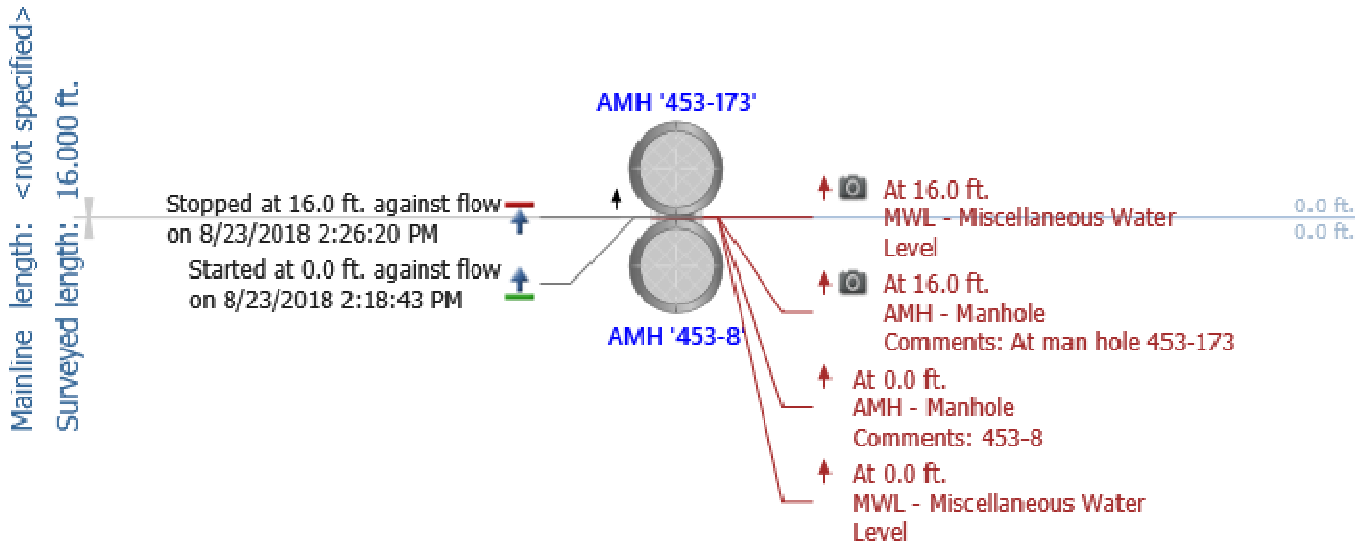
Project name:	Mainline ID:	City:	Street:
Muldoon CCTV 2018	453-9 to 453-8	Anchorage	Muldoon
Start date/time:	Direction:	Weather:	Location code:
8/22/2018 12:50 PM	U		
Shape:	Material:	Height:	Width:
C	FRP	36 in.	

Notes: 453-9 to 453-8

- 36-in. FRP
- 126 LF
- Minimal debris
- No defects observed
- Flow: 1-2"
- Grade score of: 1

Main Inspections Pipe Run

Project name:	Mainline ID:	City:	Street:
Muldoon CCTV 2018	453-173 to 453-8	Anchorage	Muldoon Rd
Start date/time:	Direction:	Weather:	Location code:
8/23/2018 2:18 PM	U		
Shape:	Material:	Height:	Width:
C	CMP	12 in.	

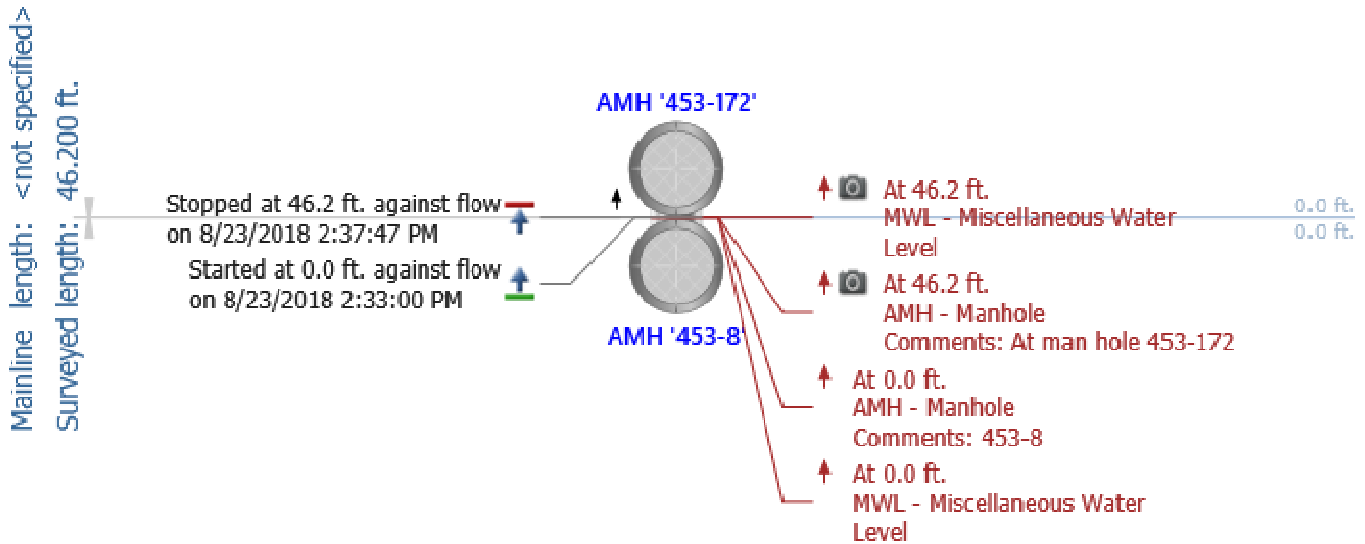


Notes: 453-173 to 453-8

- 12-in. CMP
- 16 LF
- 1-2" of debris
- Surface corrosion 3:00 to 9:00 position
- Debris buildup at upstream end
- Flow: 1-2"
- Grade score of: 3

Main Inspections Pipe Run

Project name:	Mainline ID:	City:	Street:
Muldoon CCTV 2018	453-172 to 453-8	Anchorage	Muldoon Rd
Start date/time:	Direction:	Weather:	Location code:
8/23/2018 2:33 PM	U		
Shape:	Material:	Height:	Width:
C	CMP	12 in.	



Notes: 453-172 to 453-8

- 12-in. CMP
- 46 LF
- Surface corrosion at pipe ends at joints
- Minor surface corrosion visible in 5:00 and 7:00 position 19 LF to 39 LF, spreads to 4:00 and 8:00 and metal flaking at 39 LF
- Minimal debris in pipe, 3" debris buildup at 40 LF
- Flow: 0-1"
- Grade score of: 3



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Fax: 407-425-1569

Main Inspections Pipe Run

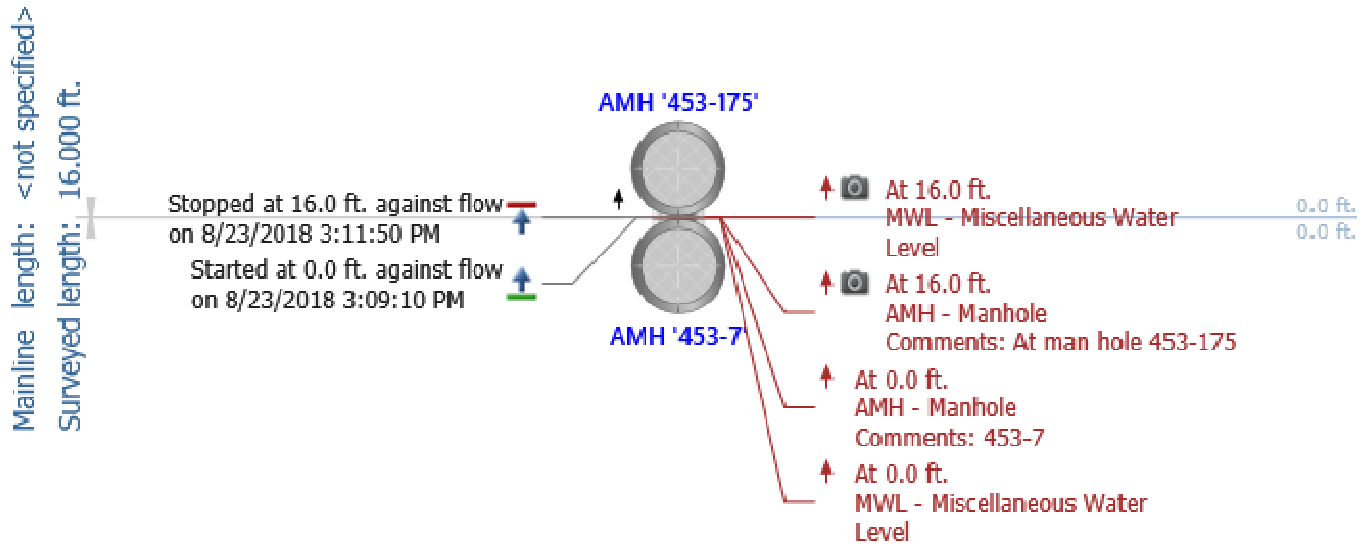
Project name:	Mainline ID:	City:	Street:
Muldoon CCTV 2018	453-8 to 453-7	Anchorage	Muldoon
Start date/time:	Direction:	Weather:	Location code:
8/22/2018 1:10 PM	D		
Shape:	Material:	Height:	Width:
C	FRP	36 in.	

Notes: 453-8 to 453-7

- 36-in. FRP
- 268 LF
- Minimal Debris in pipe
- No major defects observed
- Flow: 2-3"
- Grade score of: 1

Main Inspections Pipe Run

Project name:	Mainline ID:	City:	Street:
Muldoon CCTV 2018	453-175 to 453-7	Anchorage	Muldoon
Start date/time:	Direction:	Weather:	Location code:
8/23/2018 3:09 PM	U		
Shape:	Material:	Height:	Width:
C	CMP	12 in.	

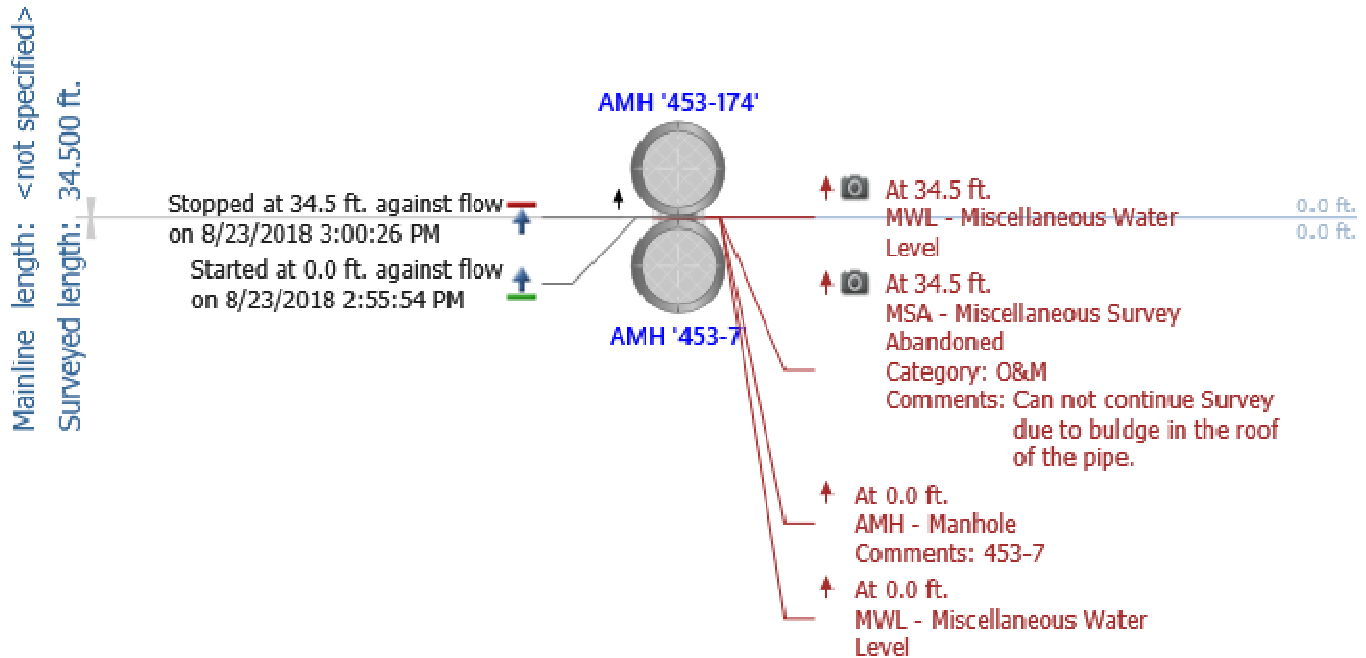


Notes: 453-175 to 453-7

- 12-in. CMP
- 16 LF
- Minimal debris in pipe
- No defects observed
- Flow: Minimal
- Grade score of: 1

Main Inspections Pipe Run

Project name:	Mainline ID:	City:	Street:
Muldoon CCTV 2018	453-174 to 453-7	Anchorage	Muldoon Rd
Start date/time:	Direction:	Weather:	Location code:
8/23/2018 2:55 PM	U		
Shape:	Material:	Height:	Width:
C	CMP	12 in.	



Notes: 453-174 to 453-7

- 12-in. CMP
- 35 LF
- 0-1" debris in upstream end
- Surface corrosion visible in 5:00 and 7:00 position
- Surface corrosion on pipe ends at joint
- 3-4" deformation 12:00 position at 30 LF
- 6-7" deformation, 11:00 to 4:00 position at 35 LF, camera unable to pass
- Camera zoomed to complete inspection
- Flow: 0-1"
- Grade score of: 3



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Main Inspections Pipe Run

Project name:	Mainline ID:	City:	Street:
Muldoon CCTV 2018	453-7 to 453-6	Anchorage	Muldoon
Start date/time:	Direction:	Weather:	Location code:
8/22/2018 1:59 PM	U		
Shape:	Material:	Height:	Width:
C	FRP	36 in.	

Notes: 453-7 to 453-6

- 36-in. FRP
- 268 LF
- Minimal debris in pipe
- No major defects observed
- Flow: 2-3"
- Grade score of: 1



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Main Inspections Pipe Run

Project name:	Mainline ID:	City:	Street:
Muldoon CCTV 2018	453-6 to 453-3	Anchorage	Muldoon
Start date/time:	Direction:	Weather:	Location code:
8/22/2018 2:17 PM	D		
Shape:	Material:	Height:	Width:
C	FRP	36 in.	

Notes: 453-6 to 453-3

- 36-in. FRP
- 267 LF
- Pipe broken, debris in hole, 4-5", 12:00 position at 74 LF
- Minimal debris in pipe
- Flow: 1-2"
- Grade score of: 3



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Main Inspections Pipe Run

Project name:	Mainline ID:	City:	Street:
Muldoon CCTV 2018	453-3 to 453-2	Anchorage	Muldoon
Start date/time:	Direction:	Weather:	Location code:
8/22/2018 2:46 PM	U		
Shape:	Material:	Height:	Width:
C	FRP	36 in.	

Notes: 453-3 to 453-2

- 36-in. FRP
- 120 LF
- Minimal debris
- No major defects observed
- Flow: 1-2"
- Grade score of: 1



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Main Inspections Pipe Run

Project name:	Mainline ID:	City:	Street:
Muldoon CCTV 2018	453-2 to 574-4	Anchorage	Muldoon
Start date/time:	Direction:	Weather:	Location code:
8/22/2018 3:07 PM	D		
Shape:	Material:	Height:	Width:
C	FRP	36 in.	

Notes: 453-2 to 574-4

- 36-in. FRP
- 261 LF
- Metal thaw line in bottom of pipe
- Minimal debris
- No major defects observed
- Flow: 1-2"
- Grade score of: 1



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Main Inspections Pipe Run

Project name:	Mainline ID:	City:	Street:
Muldoon CCTV 2018	574-Inlet to 574-4	Anchorage	Muldoon
Start date/time:	Direction:	Weather:	Location code:
8/24/2018 10:23 AM	U		
Shape:	Material:	Height:	Width:
C	CMP	42 in.	

Notes: 574-Inlet to 574-4

- 42-in. CMP
- 68 LF
- Thaw line in 4:00 position
- Horizontal deflection at joint at 20 LF
- Evidence of corrosion in invert
- Surface corrosion between 5:00 and 7:00 position
- Evidence of infiltration at joint, 64 LF
- Debris buildup on upstream inlet grate
- Flow: 0-1"
- Grade score of: 3



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Main Inspections Pipe Run

Project name:	Mainline ID:	City:	Street:
Muldoon CCTV 2018	574-4 to 574-2	Anchorage	Muldoon
Start date/time:	Direction:	Weather:	Location code:
8/24/2018 9:59 AM	D		
Shape:	Material:	Height:	Width:
C	FRP	48 in.	

Notes: 574-4 to 574-2

- 48-in. FRP
- 280 LF
- Thaw pipe in bottom of pipe
- Glitch in footage, missing first 35 LF of pipe
- 171 LF, Hole in pipe in 12:00 position, appears to have been drilled bored through
- 2-3" of debris in upstream end
- Flow: 3-4"
- Grade score of: 2



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Main Inspections Pipe Run

Project name:	Mainline ID:	City:	Street:
Muldoon CCTV 2018	574-2 to 1298-313	Anchorage	Muldoon
Start date/time:	Direction:	Weather:	Location code:
8/24/2018 10:50 AM	U		
Shape:	Material:	Height:	Width:
C	FRP	48 in.	

Notes: 574-2 to 1298-313

- 48-in. FRP
- 196 LF
- Thaw line in bottom of pipe
- 0-1" debris in pipe
- No major defects observed
- Flow: 1-2"
- Grade score of: 1



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Main Inspections Pipe Run

Project name:	Mainline ID:	City:	Street:
Muldoon CCTV 2018	1298-313 to 1298-281	Anchorage	Muldoon
Start date/time:	Direction:	Weather:	Location code:
8/24/2018 11:08 AM	D		
Shape:	Material:	Height:	Width:
C	FRP	48 in.	

Notes: 1298-313 to 1298-281

- 48-in. FRP
- 241 LF
- Thaw line in bottom of pipe
- 3-4" scratch in pipe, appears to be manufacturing defect, 1:00 position at 73 LF
- No major defects observed
- Flow: 1-2"
- Grade score of: 1



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Main Inspections Pipe Run

Project name:	Mainline ID:	City:	Street:
Muldoon CCTV 2018	1298-282 to 1298-281	Anchorage	Muldoon
Start date/time:	Direction:	Weather:	Location code:
8/24/2018 11:18 AM	U		
Shape:	Material:	Height:	Width:
C	DIP	18 in.	

Notes: 1298-282 to 1298-281

- 18-in. DIP
- 42 LF
- Evidence of infiltration at joints, surface corrosion visible
- Organic material in top of pipe
- Horizontal bend in pipe at joint, 25 LF
- Surface corrosion visible in 3:00 and 9:00 position at upstream end
- Possible corrosion in invert, requires verification
- Flow: 0-1"
- Grade score of: 2



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Main Inspections Pipe Run

Project name:	Mainline ID:	City:	Street:
Muldoon CCTV 2018	1298-281 to 1298-279	Anchorage	Muldoon
Start date/time:	Direction:	Weather:	Location code:
8/24/2018 11:55 AM	U		
Shape:	Material:	Height:	Width:
C	FRP	48 in.	

Notes: 1298-281 to 1298-279

- 48-in. FRP
- 231 LF
- 0-1" debris in pipe
- Scattered debris on top of pipe
- Thaw line in bottom of pipe
- No major defects observed
- Flow: 1-2"
- Grade score of: 1



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Main Inspections Pipe Run

Project name:	Mainline ID:	City:	Street:
Muldoon CCTV 2018	1298-280 to 1298-279	Anchorage	Muldoon
Start date/time:	Direction:	Weather:	Location code:
8/24/2018 1:28 PM	U		
Shape:	Material:	Height:	Width:
C	CMP	12 in.	

Notes: 1298-280 to 1298-279

- 12-in. CMP
- 231 LF
- 0-1" debris in pipe
- Surface corrosion visible in invert, metal loss observed in 3:00 position at 10 LF
- Surface corrosion at pipe end at joint, metal loss observed, 20 LF
- Grade change at 20 LF, pipe slope becomes less steep
- Surface corrosion visible in 8:00 position, final 3 feet of pipe
- Flow: None
- Grade score of: 3



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Main Inspections Pipe Run

Project name:	Mainline ID:	City:	Street:
Muldoon CCTV 2018	1298-283 to 1298-279	Anchorage	Muldoon
Start date/time:	Direction:	Weather:	Location code:
8/24/2018 1:36 PM	U		
Shape:	Material:	Height:	Width:
C	CMP	12 in.	

Notes: 1298-283 to 1298-279

- 12-in. CMP
- 46 LF
- Debris on top of pipe
- Minor surface corrosion/discoloration in 5:00 and 7:00 position
- Horizontal bend at joint at 23 LF
- Possible corrosion in invert, minimal debris obscures camera view
- Flow: Minimal
- Grade score of: 2



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Main Inspections Pipe Run

Project name:	Mainline ID:	City:	Street:
Muldoon CCTV 2018	1298-279 to 1298-279A	Anchorage	Muldoon
Start date/time:	Direction:	Weather:	Location code:
8/24/2018 12:23 PM	D		
Shape:	Material:	Height:	Width:
C	FRP	48 in.	

Notes: 1298-279 to 1298-279A

- 48-in. FRP
- 300 LF
- 1-2" of debris
- Debris on top of pipe at approximately 170 LF
- Survey concluded at 163 LF due to debris
- No major defects observed
- Flow: 2-3"
- Grade score of: 2



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Main Inspections Pipe Run

Project name:	Mainline ID:	City:	Street:
Muldoon CCTV 2018	282-8A to 282-7A	Anchorage	Muldoon
Start date/time:	Direction:	Weather:	Location code:
7/31/2018 10:39 AM	U		
Shape:	Material:	Height:	Width:
C	CPEP	18 in.	

Notes: 282-8A to 282-7A

- 18-in. CPEP
- 79 LF
- 0-1" debris
- No major defects observed
- Flow: Minimal
- Grade score of: 1



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Main Inspections Pipe Run

Project name:	Mainline ID:	City:	Street:
Muldoon CCTV 2018	282-7 to 282-7A	Anchorage	Muldoon
Start date/time:	Direction:	Weather:	Location code:
7/31/2018 11:19 AM	U		
Shape:	Material:	Height:	Width:
C	CPEP	24 in.	

Notes: 282-7 to 282-7A

- 24-in. CPEP
- 15 LF
- Minimal debris
- No defects observed
- Flow: None
- Grade score of: 1



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Main Inspections Pipe Run

Project name:	Mainline ID:	City:	Street:
Muldoon CCTV 2018	282-9 to 282-7	Anchorage	Muldoon
Start date/time:	Direction:	Weather:	Location code:
7/31/2018 11:34 AM	U		
Shape:	Material:	Height:	Width:
C	RCP	24 in.	

Notes: 282-9 to 282-7

- 24-in. RCP
- 130 LF
- 1-2" of debris in pipe
- No major defects observed
- Flow: Minimal
- Grade score of: 1



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Main Inspections Pipe Run

Project name:	Mainline ID:	City:	Street:
Muldoon CCTV 2018	282-33 to 282-9	Anchorage	Muldoon
Start date/time:	Direction:	Weather:	Location code:
8/20/2018 11:21 AM	U		
Shape:	Material:	Height:	Width:
C	CMP	12 in.	

Notes: 282-33 to 282-9

- 12-in. CMP
- 64 LF
- 0-1" debris
- Surface corrosion, 5:00 and 7:00 position
- Downstream invert probed, metal appeared sound
- 2" debris buildup at upstream end
- Flow: Minimal
- Grade score of: 2



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Main Inspections Pipe Run

Project name:	Mainline ID:	City:	Street:
Muldoon CCTV 2018	282-10 to 282-9	Anchorage	Muldoon
Start date/time:	Direction:	Weather:	Location code:
7/31/2018 11:59 AM	U		
Shape:	Material:	Height:	Width:
C	RCP	24 in.	

Notes: 282-10 to 282-9

- 24-in. RCP
- 300 LF
- 1-2" of debris in pipe
- Exposed aggregate, 20 LF
- Circumferential crack at 250 LF
- Holes in pipe, soil visible, 1:00 and 11:00 position, 250 LF, debris entering pipe, possible voids behind pipe
- Broken pipe, 12:00 position, 271 LF, rebar and aggregate visible
- Corrosion visible at joint, 280 LF
- Rebar exposed in upstream end
- Flow: Minimal
- Grade score of: 4



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Main Inspections Pipe Run

Project name:	Mainline ID:	City:	Street:
Muldoon CCTV 2018	282-11 to 282-10	Anchorage	Muldoon
Start date/time:	Direction:	Weather:	Location code:
8/20/2018 11:54 AM	U		
Shape:	Material:	Height:	Width:
C	CMP	12 in.	

Notes: 282-11 to 282-10

- 12-in. CMP
- 63 LF
- 1-3" debris
- Surface corrosion between 5:00 and 7:00 position 3 LF to 13 LF, 40 LF to end of pipe
- Surface corrosion at pipe ends at joints
- Surface corrosion 4:00 and 8:00 position, 13 LF to 40 LF
- Downstream invert probed, evidence of corrosion observed
- Flow: Minimal
- Grade score of: 3



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Fax: 407-425-1569

Main Inspections Pipe Run

Project name:	Mainline ID:	City:	Street:
Muldoon CCTV 2018	282-13 to 282-10	Anchorage	Muldoon
Start date/time:	Direction:	Weather:	Location code:
7/31/2018 1:23 PM	D		
Shape:	Material:	Height:	Width:
C	RCP	24 in.	

Notes: 282-13 to 282-10

- 24-in. RCP
- 66 LF
- 0-1" debris
- No major defects observed
- Flow: 0-1"
- Grade score of: 1



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Main Inspections Pipe Run

Project name:	Mainline ID:	City:	Street:
Muldoon CCTV 2018	282-14 to 282-13	Anchorage	Muldoon
Start date/time:	Direction:	Weather:	Location code:
8/20/2018 12:22 PM	U		
Shape:	Material:	Height:	Width:
C	CMP	12 in.	

Notes: 282-14 to 282-13

- 12-in. CMP
- 63 LF
- Minor surface corrosion visible between 5:00 and 7:00 position
- Minimal debris in pipe
- No major defects observed
- Flow: Minimal
- Grade score of: 2



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Main Inspections Pipe Run

Project name:	Mainline ID:	City:	Street:
Muldoon CCTV 2018	282-13B to 282-13	Anchorage	Muldoon
Start date/time:	Direction:	Weather:	Location code:
7/31/2018 1:09 PM	D		
Shape:	Material:	Height:	Width:
C	CMP	18 in.	

Notes: 282-13B to 282-13

- 18-in. CMP
- 111 LF
- 0-1" debris
- Surface corrosion visible, 5:00 and 7:00 position, 3:00 and 9:00 position at approximately 60 LF, corrosion from 1:00 to 11:00 position 90 LF to end of pipe
- Surface corrosion visible at pipe ends at joints
- Evidence of corrosion visible in invert
- 1" hole, soil visible, 12:0 position at 35 LF
- 1" deformation, 12:00 position, 45 LF
- Downstream invert probed, metal appeared sound
- Flow: Minimal
- Grade score of: 3



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Phone: 407-849-0190
Fax: 407-425-1569

Main Inspections Pipe Run

Project name:	Mainline ID:	City:	Street:
Muldoon CCTV 2018	282-20 to 282-13B	Anchorage	Muldoon
Start date/time:	Direction:	Weather:	Location code:
7/31/2018 1:47 PM	U/D		
Shape:	Material:	Height:	Width:
C	CMP	18 in.	

Notes: 282-20 to 282-13B

- 18-in. CMP
- 158 LF
- Upstream survey: Surface corrosion, 4:00 and 8:00 position, 3:00 and 9:00 position 18 LF
- Surface corrosion visible in invert
- Surface corrosion visible at pipe ends at joints
- Debris buildup at 20 LF, 3-4"
- Hole, 10:00 position, soil visible, void behind pipe, asphalt visible, repaired by DOT O&M August 2018
- Downstream survey: 0-1" of debris
- Surface corrosion, 5:00 and 7:00 position, spreads to 3:00 and 9:00 position at approximately 80 LF
- Corrosion visible in invert, upstream invert probed, metal loss observed
- Reached hole, 137 LF
- Flow: 0-1"
- Grade score of: 4



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Fax: 407-425-1569

Main Inspections Pipe Run

Project name:	Mainline ID:	City:	Street:
Muldoon CCTV 2018	282-31 to 282-20	Anchorage	Muldoon
Start date/time:	Direction:	Weather:	Location code:
8/20/2018 12:58 PM	U		
Shape:	Material:	Height:	Width:
C	CMP	12 in.	

Notes: 282-31 to 282-20

- 12-in. CMP
- 63 LF
- 1-3" debris
- Surface corrosion between 4:00 and 8:00 position throughout pipe
- Surface corrosion at pipe ends at joints
- Surface corrosion visible in invert
- Flow: Minimal
- Grade score of: 3



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Fax: 407-425-1569

Main Inspections Pipe Run

Project name:	Mainline ID:	City:	Street:
Muldoon CCTV 2018	282-21 to 282-20	Anchorage	Muldoon
Start date/time:	Direction:	Weather:	Location code:
8/20/2018 3:06 PM	D		
Shape:	Material:	Height:	Width:
C	CMP	18 in.	

Notes: 282-21 to 282-20

- 18-in. CMP
- 275 LF
- Surface corrosion visible in 5:00 and 7:00 position
- Surface corrosion on pipe ends at joints
- Surface corrosion visible in invert, downstream invert probed, corrosion observed
- 2" deformation, 12:00 position at 104 LF
- Discoloration in bottom half of pipe
- 2" deformation, 7:00 position 174 LF
- 1-2" deformation, 1" hole in pipe, 10:00 position at 178 LF
- Flow: 0-1"
- Grade score of: 3



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Fax: 407-425-1569

Main Inspections Pipe Run

Project name:	Mainline ID:	City:	Street:
Muldoon CCTV 2018	282-22 to 282-21	Anchorage	Muldoon
Start date/time:	Direction:	Weather:	Location code:
8/20/2018 1:21 PM	U		
Shape:	Material:	Height:	Width:
C	CMP	12 in.	

Notes: 282-22 to 282-21

- 12-in. CMP
- 64 LF
- 0-1" debris
- Surface corrosion, 9:00 position 14 LF
- Surface corrosion, 4:00 position to 8:00 position, 2:00 to 10:00 55 LF to end of pipe
- Pipe ends at joints have surface corrosion
- Flow: 0-1"
- Grade score of: 3



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Phone: 407-849-0190
Fax: 407-425-1569

Main Inspections Pipe Run

Project name:	Mainline ID:	City:	Street:
Muldoon CCTV 2018	282-23 to 282-21	Anchorage	Muldoon
Start date/time:	Direction:	Weather:	Location code:
8/20/2018 2:47 PM	D		
Shape:	Material:	Height:	Width:
C	CMP	18 in.	

Notes: 282-23 to 282-21

- 18-in. CMP
- 263 LF
- Corrosion visible in 5:00 and 7:00 position
- Surface corrosion visible at pipe ends at joints
- Rock in joint, 12:00 position at 127 LF
- 2" deformation 9:00 position at 204 LF
- 0-1" debris in downstream end
- Flow: 0-1"
- Grade score of: 2



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Fax: 407-425-1569

Main Inspections Pipe Run

Project name:	Mainline ID:	City:	Street:
Muldoon CCTV 2018	282-24 to 282-23	Anchorage	Muldoon
Start date/time:	Direction:	Weather:	Location code:
8/20/2018 1:44 PM	U		
Shape:	Material:	Height:	Width:
C	CMP	12 in.	

Notes: 282-24 to 282-23

- 12-in. CMP
- 60 LF
- Survey performed during rain event
- Surface corrosion visible in 5:00 and 7:00 position, bottom half of pipe from 50 LF to end of survey
- Debris visible in pipe
- Surface corrosion on pipe ends at joints
- Corrosion visible in invert, downstream invert probed and metal appeared sound
- 9-10" debris buildup at upstream end, unable to see final 2-3' of pipe
- Flow: 1-2"
- Grade score of: 2



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Main Inspections Pipe Run

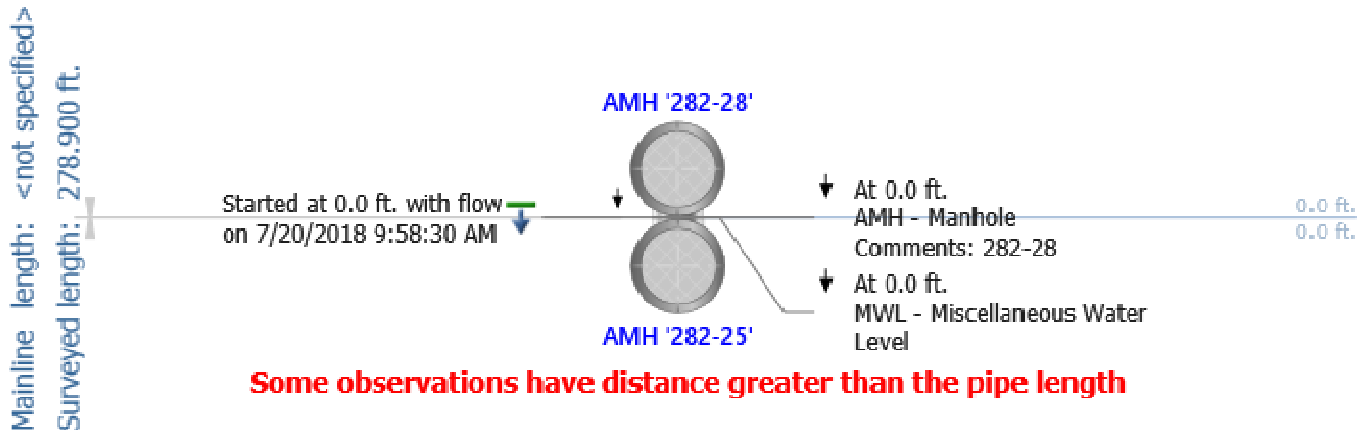
Project name:	Mainline ID:	City:	Street:
Muldoon CCTV 2018	282-25 to 282-23	Anchorage	Muldoon
Start date/time:	Direction:	Weather:	Location code:
8/20/2018 2:10 PM	U		
Shape:	Material:	Height:	Width:
C	CMP	18 in.	

Notes: 282-25 to 282-23

- 18-in. CMP
- 324 LF
- Survey performed during rain event
- Discoloration in bottom half of pipe
- Surface corrosion visible, 5:00 and 8:00 position, pipe ends at joints
- Downstream invert probed, invert has corrosion, difficult to view in pipe due to flow rate
- 1" hole at joint, 12:00 position at 136 LF
- Flow: 1-2"
- Grade score of: 3

Main Inspections Pipe Run

Project name:	Mainline ID:	City:	Street:
Muldoon CCTV 2018	282-28 - 282-25	Anchorage	Muldoon
Start date/time:	Direction:	Weather:	Location code:
7/20/2018 9:58 AM	D		
Shape:	Material:	Height:	Width:
C	CMP	18 in.	

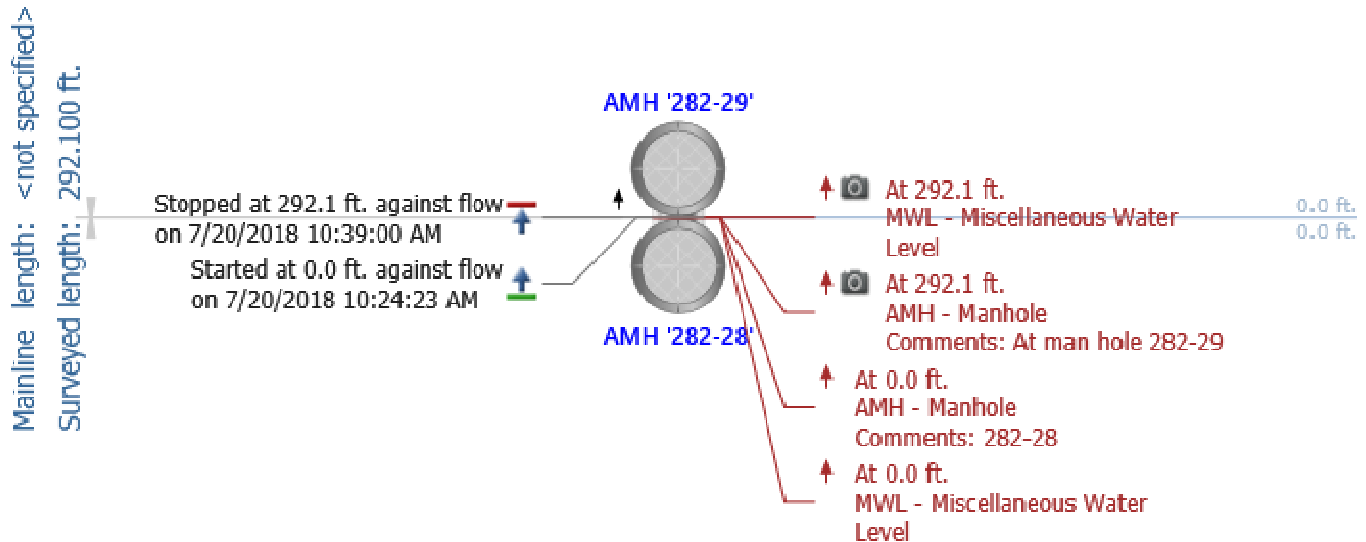


Notes: 282-28 to 282-25

- 18-in. CMP
- 279 LF
- Minimal Debris
- Upstream invert probed, metal appeared sound, corrosion visible in invert down pipe
- Minor surface corrosion at pipe end at joints
- Minor debris increase at joints, 1-2"
- Transition between pipe sticks uneven at joint at 185 LF. does not appear to affect flow properties of pipe
- Debris at downstream end
- Flow: None
- Grade score of: 2

Main Inspections Pipe Run

Project name:	Mainline ID:	City:	Street:
Muldoon CCTV 2018	282-29 to 282-28	Anchorage	Muldoon
Start date/time:	Direction:	Weather:	Location code:
7/20/2018 10:24 AM	U		
Shape:	Material:	Height:	Width:
C	CMP	18 in.	

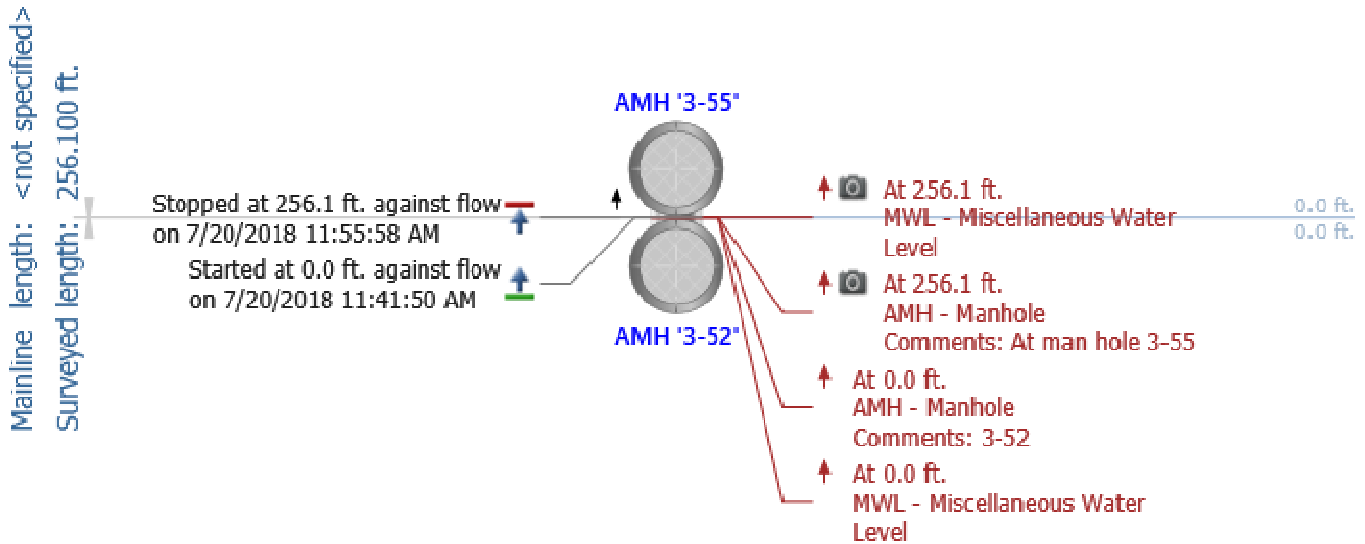


Notes: 282-29 to 282-28

- 18-in. CMP
- 292 LF
- Minimal debris, 1" debris in upstream end
- Surface corrosion visible in invert, downstream invert appeared sound when probed
- Discoloration between 5:00 and 7:00 position
- Corrosion visible at pipe ends at joints
- 2-3" deformation, 11:00 to 12:00 position at 156 LF
- Pipe oval, 229 LF, approximately 5-10% loss in cross sectional area
- 1" deformation, 10:00 position at 275 LF
- Flow: Minimal
- Grade score of: 3

Main Inspections Pipe Run

Project name:	Mainline ID:	City:	Street:
Muldoon CCTV 2018	3-55 to 3-52	Anchorage	Muldoon
Start date/time:	Direction:	Weather:	Location code:
7/20/2018 11:41 AM	U		
Shape:	Material:	Height:	Width:
C	DIP	18 in.	

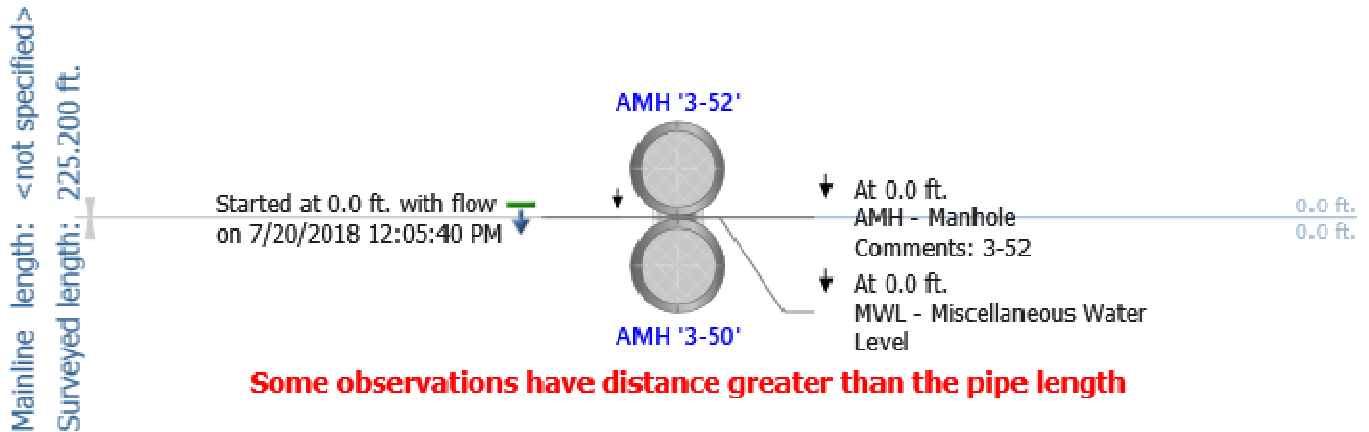


Notes: 3-55 to 3-52

- 18-in. DIP
- 256 LF
- 1-2" debris
- Debris buildup at joint at 220 LF
- Evidence of surface corrosion in invert, obscured by debris, debris is tinted rust color at various joints
- Corrosion visible at pipe ends at joints
- No major structural defects
- Flow: 1-2"
- Grade score of: 2

Main Inspections Pipe Run

Project name:	Mainline ID:	City:	Street:
Muldoon CCTV 2018	3-52 - 3-50	Anchorage	Muldoon
Start date/time:	Direction:	Weather:	Location code:
7/20/2018 12:05 PM	D		
Shape:	Material:	Height:	Width:
C	RCP	24 in.	

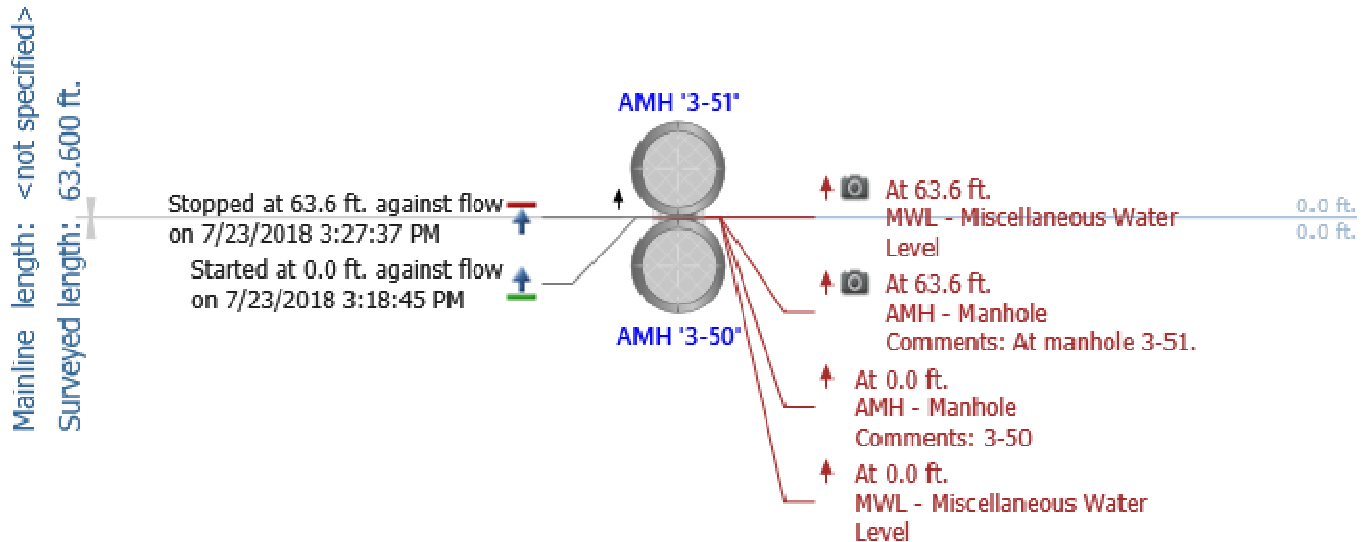


Notes: 3-52 to 3-50

- 24-in. RCP
- 225 LF
- 1-2" debris in upstream end, backs up flow to approximately 1", less than 1" debris on average throughout pipe
- Crack, 8:00 position from 93 LF to 100 LF
- Crack, 2:00 position from 123 LF to 132 LF
- Flow: 0-1"
- Grade score of: 1

Main Inspections Pipe Run

Project name:	Mainline ID:	City:	Street:
Muldoon CCTV 2018	3-51 to 3-50	Anchorage	Muldoon
Start date/time:	Direction:	Weather:	Location code:
7/23/2018 3:18 PM	U		
Shape:	Material:	Height:	Width:
C	CMP	12 in.	

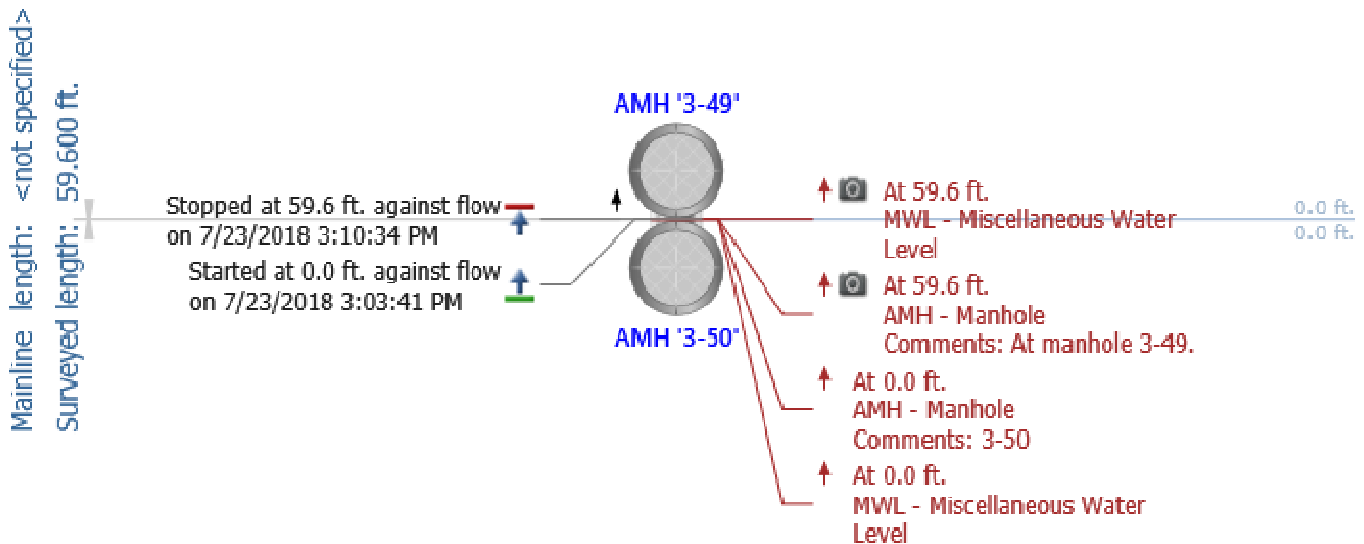


Notes: 3-51 to 3-50

- 12-in. CMP
- 64 LF
- Surface corrosion visible, 5:00 position to approximately 50 LF
- 2" deformation in 12:00 position, 8 LF
- Evidence of corrosion in invert, debris has rust tint
- 1-2" deformation, 12:00 position 12 LF
- Surface corrosion at pipe ends at joints
- 0-1" debris in pipe, 1-2" at 48 LF to end of survey
- 2-3" deformation in 12:00 position at 53 LF
- Surface corrosion in 3:00 and 9:00 position, 50 LF to end of survey
- Flow: 0-1"
- Grade score of: 3

Main Inspections Pipe Run

Project name:	Mainline ID:	City:	Street:
Muldoon CCTV 2018	3-49 to 3-50	Anchorage	Muldoon
Start date/time:	Direction:	Weather:	Location code:
7/23/2018 3:03 PM	U		
Shape:	Material:	Height:	Width:
C	CMP	12 in.	

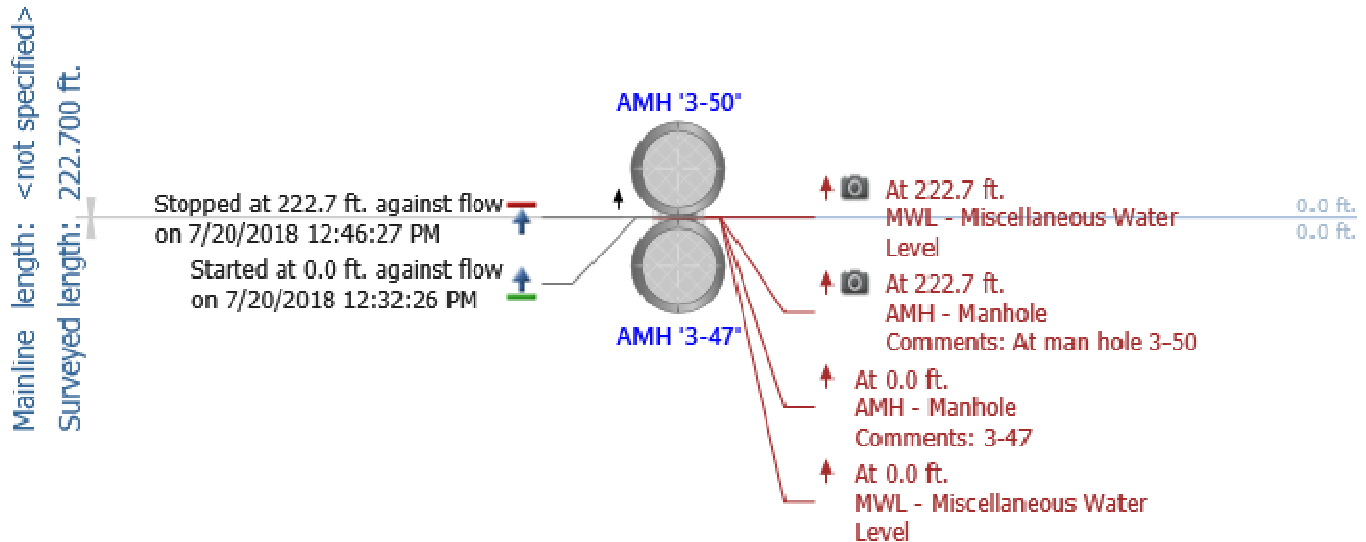


Notes: 3-49 to 3-50

- 12-in. CMP
- 60 LF
- Discoloration in bottom half of pipe
- 0-1" debris, increases to approximately 2" at 46 LF, obscures invert
- Corrosion of pipe ends at joints
- Flow: Minimal
- Grade score of: 1

Main Inspections Pipe Run

Project name:	Mainline ID:	City:	Street:
Muldoon CCTV 2018	3-50 to 3-47	Anchorage	Muldoon
Start date/time:	Direction:	Weather:	Location code:
7/20/2018 12:32 PM	U		
Shape:	Material:	Height:	Width:
C	RCP	24 in.	

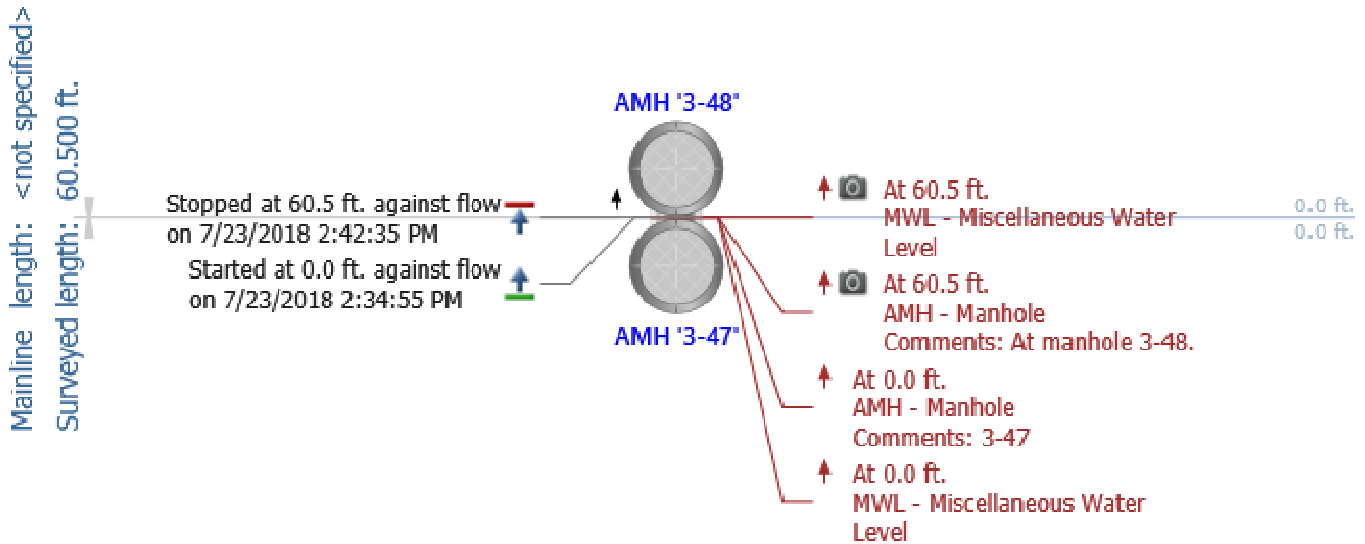


Notes: 3-50 to 3-47

- 24-in. RCP
- 223 LF
- Crack, 10:00 position, 3 LF to approximately 11 LF
- Crack, 12:00 position, 29 LF to 32 LF
- Minimal debris
- Hole in pipe, 107 LF 2:00 position
- Crack, 12:00 position at 133 LF
- Crack, 2:00 position, 198 LF
- Crack, 2:00 position, 208 LF
- Evidence of infiltration at joint, 212 LF
- Rebar exposed in downstream end
- Flow: Minimal
- Grade score of: 2

Main Inspections Pipe Run

Project name:	Mainline ID:	City:	Street:
Muldoon CCTV 2018	3-48 to 3-47	Anchorage	Muldoon
Start date/time:	Direction:	Weather:	Location code:
7/23/2018 2:34 PM	U		
Shape:	Material:	Height:	Width:
C	CMP	12 in.	

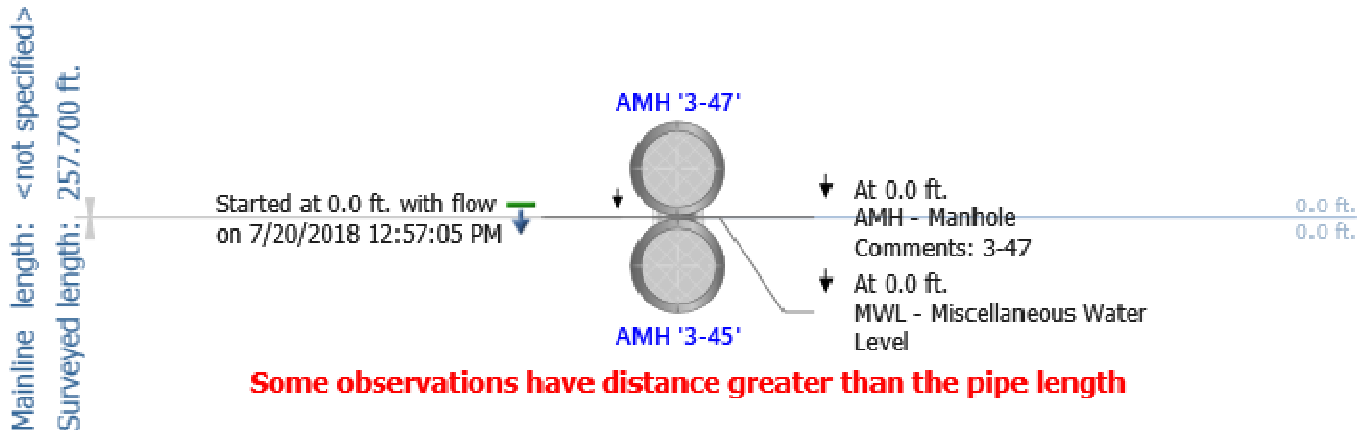


Notes: 3-48 to 3-47

- 12-in. CMP
- 61 LF
- Discoloration 3:00 position to 8:00 position
- Surface corrosion on pipe ends at joints
- Surface corrosion in 5:00 and 8:00 position, 3:00 and 9:00 position 43 LF to
- 1-2" of debris, debris buildup at 43 LF
- Water level 2-3", decreases to 0-1" after 20 LF, increases at 43 LF to 3-4"
- Unable to examine condition of invert due to debris
- Flow: Varies
- Grade score of: 3

Main Inspections Pipe Run

Project name:	Mainline ID:	City:	Street:
Muldoon CCTV 2018	3-47 - 3-45	Anchorage	Muldoon
Start date/time:	Direction:	Weather:	Location code:
7/20/2018 12:57 PM	D		
Shape:	Material:	Height:	Width:
C	RCP	24 in.	

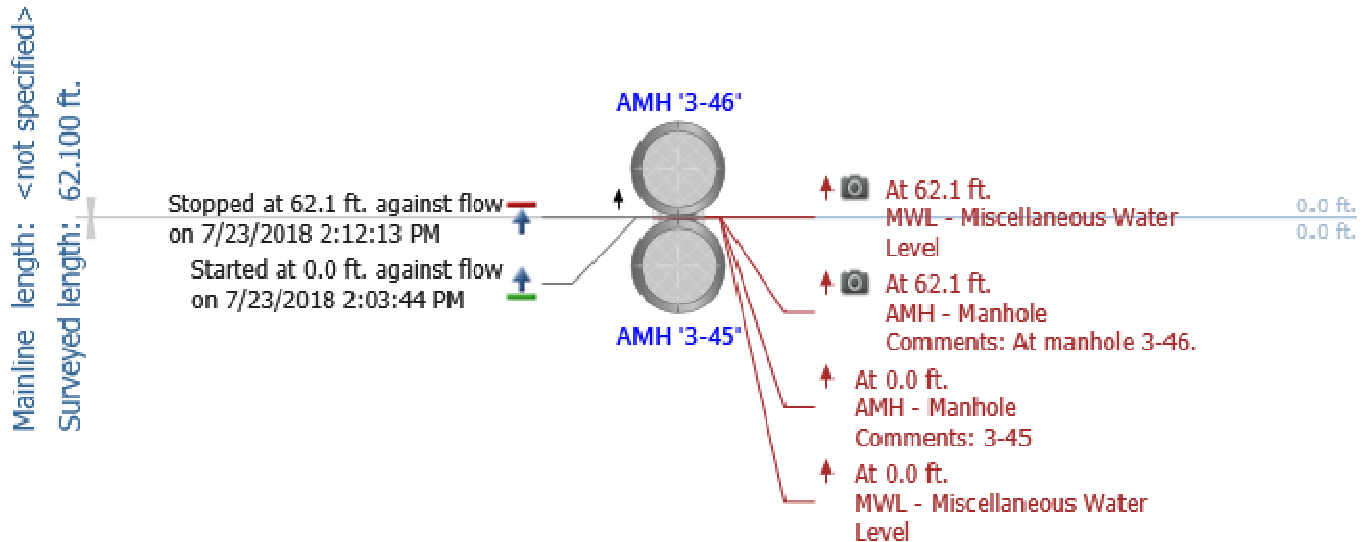


Notes: 3-47 to 3-45

- 24-in. RCP
- 258 LF
- 0-1" debris
- Crack, 1:00 position from 20 LF to 28 LF
- Cracks in 1:00 and 10:00 position, 53 LF to 58 LF
- Crack 1:00 position, 80 LF to 89 LF
- Crack 1:00 position 99 LF to 106 LF
- Crack, 10:00 position, 110 LF to 115 LF
- Circumferential crack at 131 LF
- Crack, 11:00 position 149 LF to 159 LF
- Crack, 11:00 position 180 LF to 190 LF
- Crack, 9:00 position 192 LF to 195 LF
- Circumferential cracks 193 LF and 195 LF
- Flow: 0-1"
- Grade score of: 2

Main Inspections Pipe Run

Project name:	Mainline ID:	City:	Street:
Muldoon CCTV 2018	3-46 to 3-45	Anchorage	Muldoon
Start date/time:	Direction:	Weather:	Location code:
7/23/2018 2:03 PM	U		
Shape:	Material:	Height:	Width:
C	CMP	12 in.	

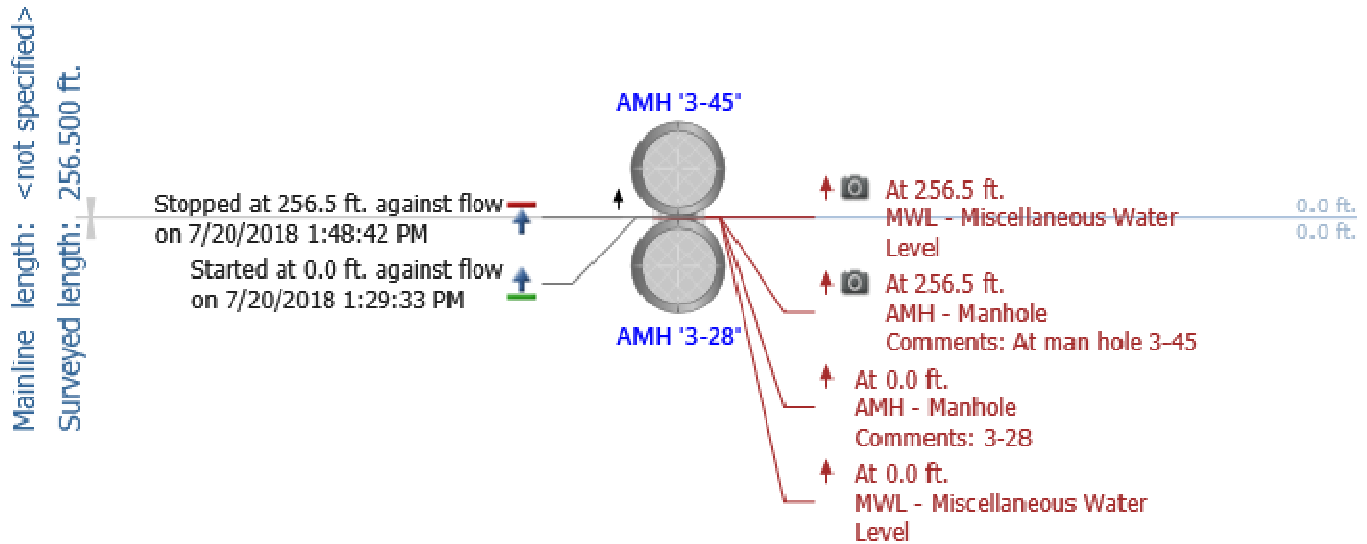


Notes: 3-46 to 3-45

- 12-in. CMP
- 62 LF
- 0-1" debris in pipe
- Discoloration in bottom half of pipe
- Surface corrosion visible at pipe ends at joint
- Surface corrosion visible, 5:00 and 7:00 position
- Surface corrosion visible 3:00 and 9:00 position, 50 LF to end of survey
- Holes in pipe, soil visible 9:00 position 60 LF
- Corrosion likely in invert, unable to verify due to debris
- Flow: None
- Grade score of: 4

Main Inspections Pipe Run

Project name:	Mainline ID:	City:	Street:
Muldoon CCTV 2018	3-45 to 3-28	Anchorage	Muldoon
Start date/time:	Direction:	Weather:	Location code:
7/20/2018 1:29 PM	U		
Shape:	Material:	Height:	Width:
C	RCP	24 in.	

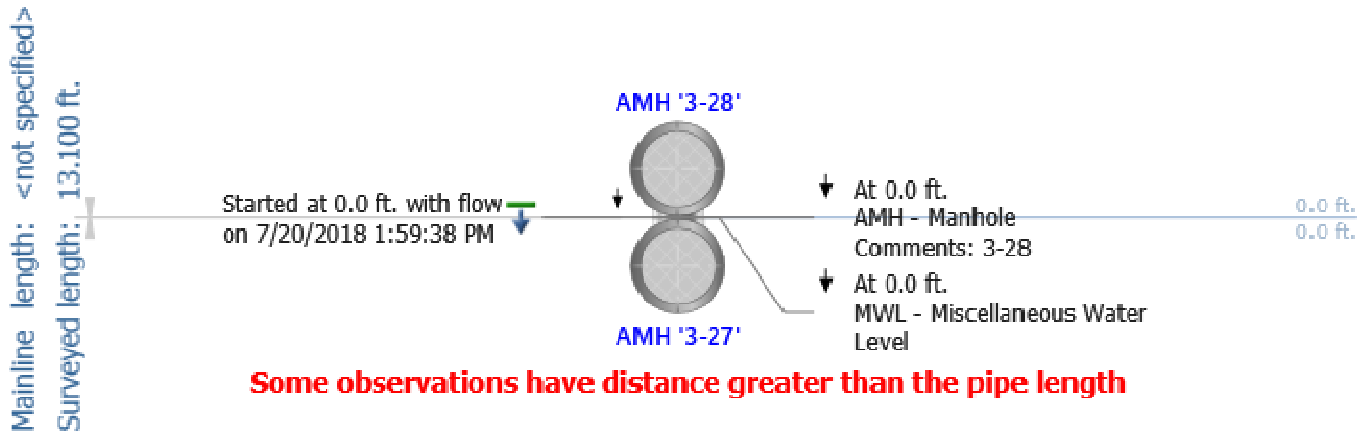


Notes: 3-45 to 3-28

- 24-in. RCP
- 257 LF
- Debris in pipe, 4:00 to 8:00 position approximately 1"
- Circumferential crack at 125 LF
- No major structural defects to pipe
- Flow: 1-2"
- Grade score of: 1

Main Inspections Pipe Run

Project name:	Mainline ID:	City:	Street:
Muldoon CCTV 2018	3-28 - 3-27	Anchorage	Muldoon
Start date/time:	Direction:	Weather:	Location code:
7/20/2018 1:59 PM	D		
Shape:	Material:	Height:	Width:
C	RCP	36 in.	

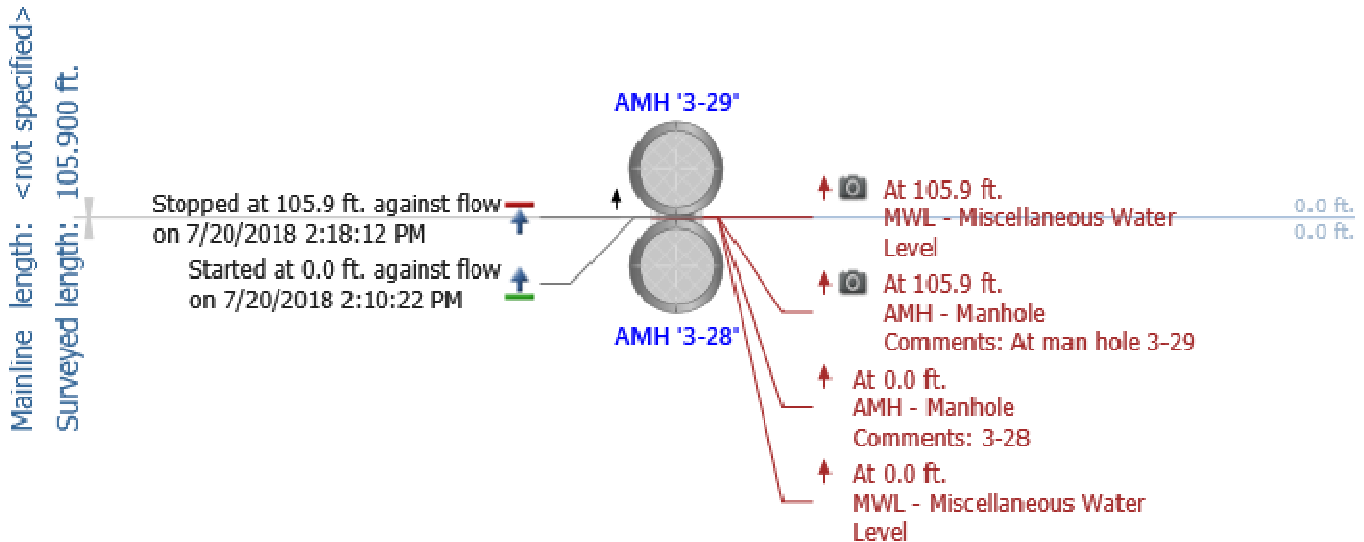


Notes: 3-28 to 3-27

- 36-in. RCP
- 13 LF
- Rebar exposed in top of pipe, 11 LF
- Inspection incomplete due to debris, unable to make conclusion about entire condition of pipe, estimating similar condition throughout
- No major structural defects observed
- Flow: 2-3"
- Grade score of: 1

Main Inspections Pipe Run

Project name:	Mainline ID:	City:	Street:
Muldoon CCTV 2018	3-29 to 3-28	Anchorage	Muldoon
Start date/time:	Direction:	Weather:	Location code:
7/20/2018 2:10 PM	U		
Shape:	Material:	Height:	Width:
C	CMP	30 in.	

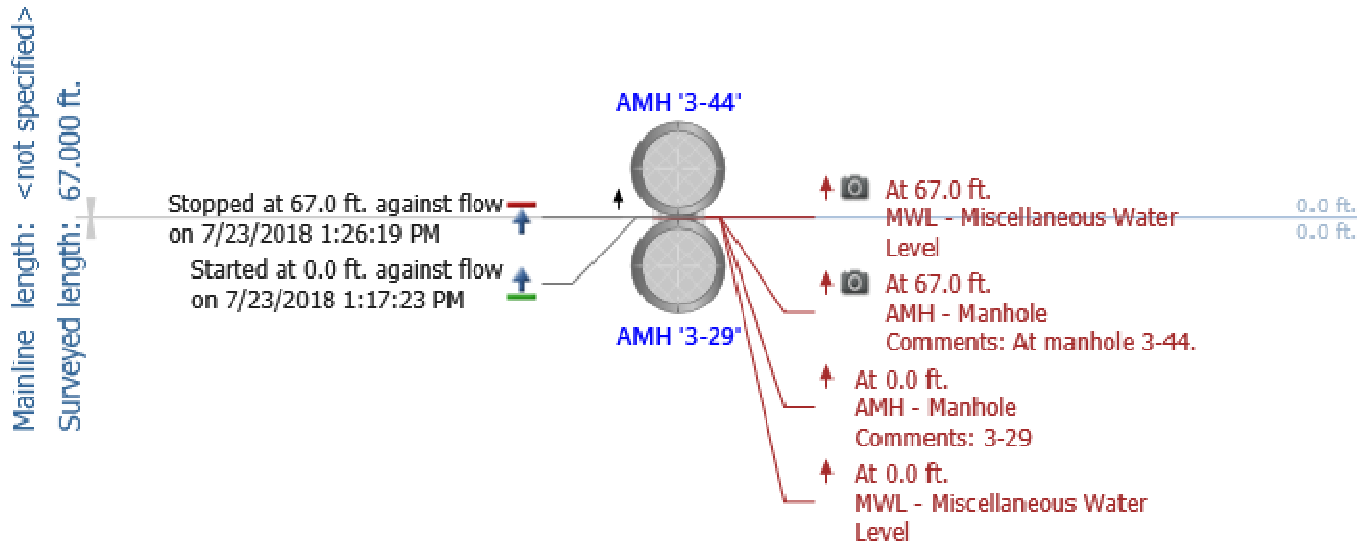


Notes: 3-29 to 3-28

- 30-in. CMP
- 106 LF
- 1-2" debris
- Surface corrosion visible in 4:00 and 8:00 position
- Corrosion visible at pipe ends at joints
- 1" deformation, 12:00 position at 64 LF
- 1" deformation, 1:00 position at 85 LF
- 2-3" deformation, 12:00 position at 88 LF
- Pipe crush, approximately half of pipe, corrosion visible, 12:00 position, at 97 LF
- Upstream invert probed, reported as soft, likely corrosion/metal loss in invert, obscured by debris in pipe
- Flow: Minimal
- Grade score of: 3

Main Inspections Pipe Run

Project name:	Mainline ID:	City:	Street:
Muldoon CCTV 2018	3-44 to 3-29	Anchorage	Muldoon
Start date/time:	Direction:	Weather:	Location code:
7/23/2018 1:17 PM	U		
Shape:	Material:	Height:	Width:
C	CMP	18 in.	

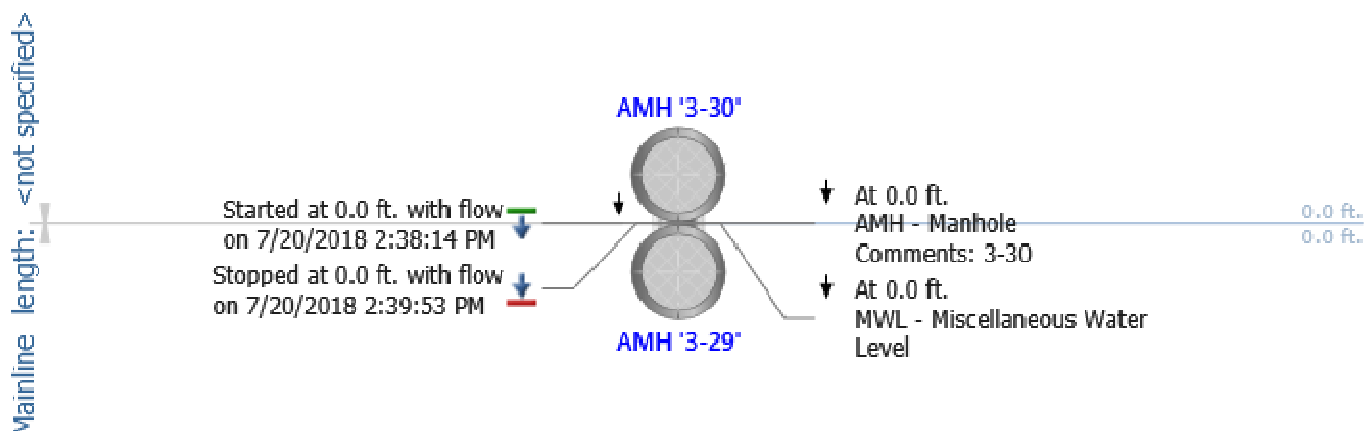


Notes: 3-44 to 3-29

- 18-in. CMP
- 67 LF
- 1-2" debris in pipe, half full of debris at upstream end
- Surface corrosion visible between 5:00 and 7:00 position
- Discoloration in bottom half of pipe
- 31 LF, pipe material changes, perforations around entire pipe
- Flow: None
- Grade score of: 3

Main Inspections Pipe Run

Project name:	Mainline ID:	City:	Street:
Muldoon CCTV 2018	3-30 - 3-29		
Start date/time:	Direction:	Weather:	Location code:
7/20/2018 2:38 PM	D		
Shape:	Material:	Height:	Width:

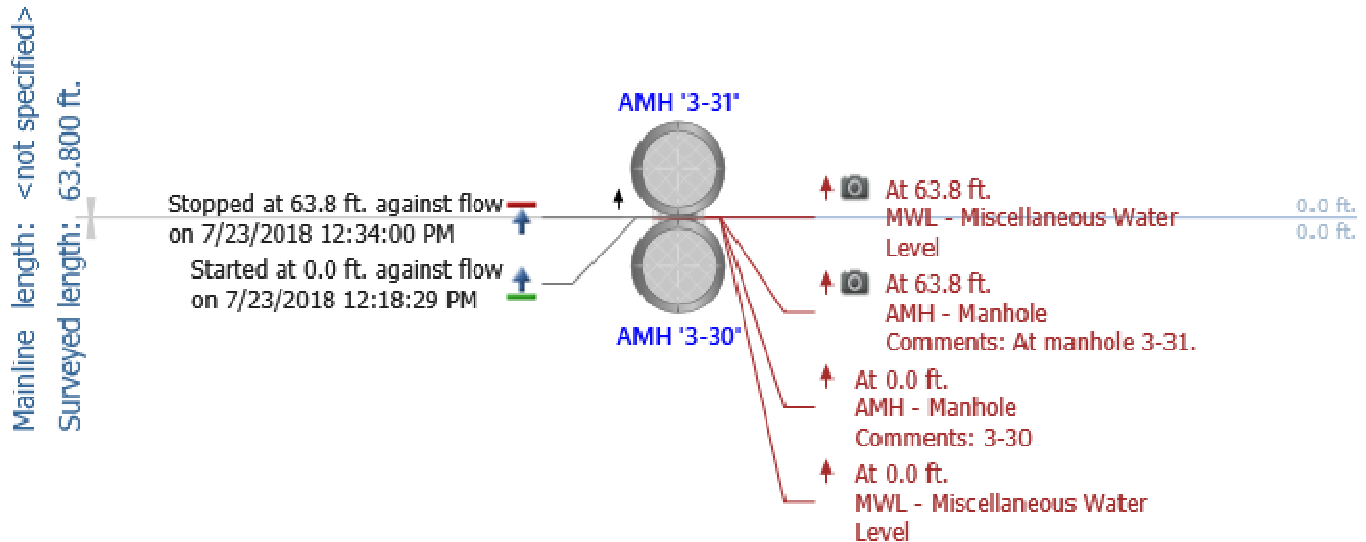


Notes: 3-30 to 3-29

- 30-in. CMP
- 208 LF
- 0-1" debris
- Corrosion visible in 4:00 and 8:00 position
- Surface corrosion visible at pipe ends at joints, 97 LF, 121 LF, 145 LF, 170 LF, 194 LF
- Invert obscured by debris, rust tinted debris shows evidence of corrosion as well as hole developed in upstream invert, inverts probed, metal is soft and metal loss found in upstream manhole
- 3" deformation in 11:00 position, 198 LF
- Flow: 0-1"
- Grade score of: 3

Main Inspections Pipe Run

Project name:	Mainline ID:	City:	Street:
Muldoon CCTV 2018	3-31 to 3-30	Anchorage	Muldoon
Start date/time:	Direction:	Weather:	Location code:
7/23/2018 12:18 PM	U		
Shape:	Material:	Height:	Width:
C	CMP	12 in.	

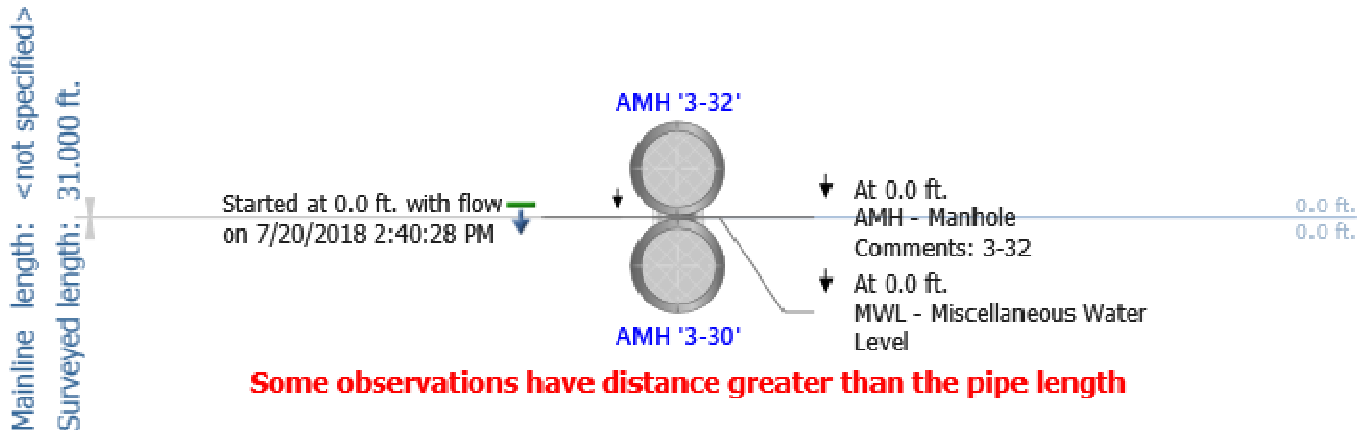


Notes: 3-31 to 3-30

- 12-in. CMP
- 64 LF
- Debris increases from 0-1" to 2-3" at 20 LF to end of pipe, 4" pile at 37 LF, knocked down by camera
- Surface corrosion 5:00 position and 7:00 position 3 LF to 20 LF, 3:00 to 9:00 position at 20 LF, 5:00 and 7:00 position 46 LF
- Corrosion visible in invert at 46 LF, likely corrosion in entire invert
- Surface corrosion on pipe ends at joints
- Flow: None
- Grade score of: 3

Main Inspections Pipe Run

Project name:	Mainline ID:	City:	Street:
Muldoon CCTV 2018	3-32 - 3-30	Anchorage	Muldoon
Start date/time:	Direction:	Weather:	Location code:
7/20/2018 2:40 PM	D		
Shape:	Material:	Height:	Width:
C	CMP	24 in.	

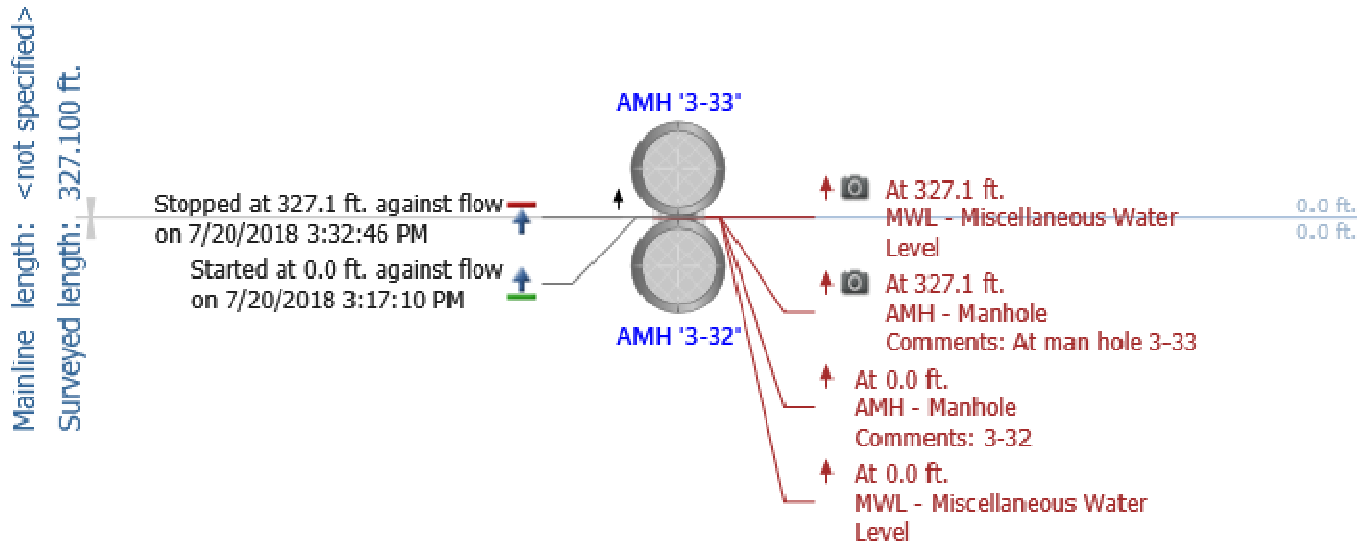


Notes: 3-32 to 3-30

- 24-in. CMP
- 31 LF
- 0-1" of debris
- Corrosion visible at pipe ends at joints
- Corrosion visible at 5:00 and 7:00
- 1" broken off invert in downstream end treatment
- Inverts probed, metal loss reported in downstream invert, metal sound in upstream, likely corrosion in invert throughout pipe, obscured by debris
- Flow: Minimal
- Grade score of: 3

Main Inspections Pipe Run

Project name:	Mainline ID:	City:	Street:
Muldoon CCTV 2018	3-33 to 3-32	Anchorage	Muldoon
Start date/time:	Direction:	Weather:	Location code:
7/20/2018 3:17 PM	U		
Shape:	Material:	Height:	Width:
C	CMP	24 in.	

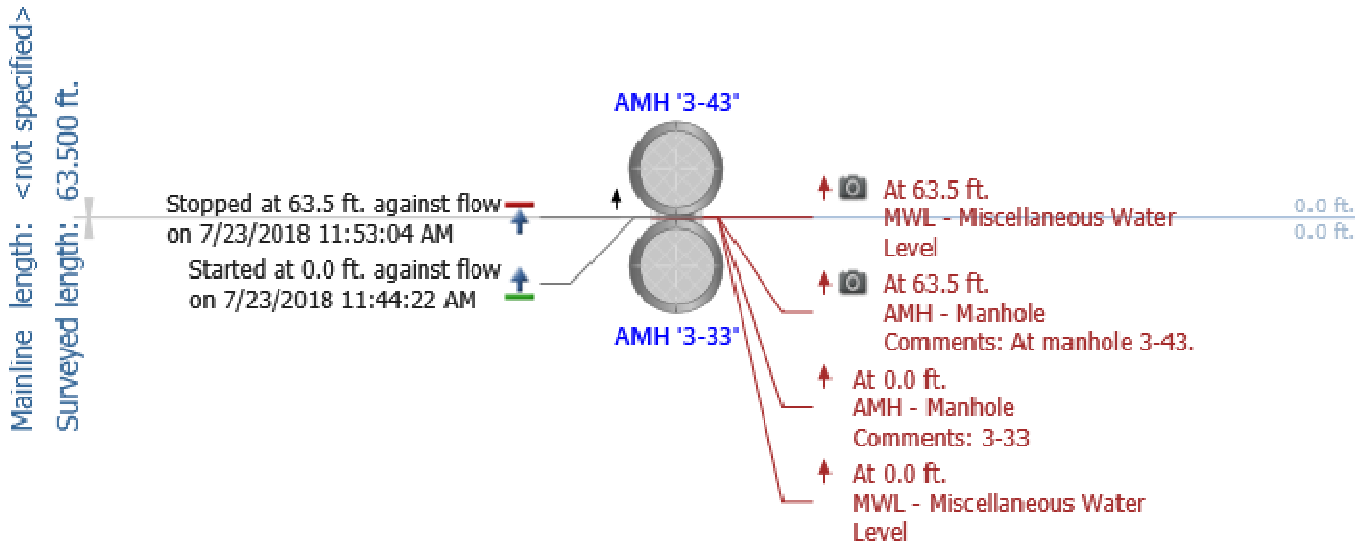


Notes: 3-33 to 3-32

- 24-in. CMP
- 327 LF
- Corrosion at pipe ends at joints
- 0-2" debris
- Surface corrosion, 5:00 and 7:00 position
- Surface corrosion in invert, obscured by debris throughout pipe, invert probed at downstream end, metal appeared sound despite surface corrosion
- Joint appears offset, 7:00 position at 146 LF
- No major structural defects observed
- Flow: 0-1"
- Grade score of: 2

Main Inspections Pipe Run

Project name:	Mainline ID:	City:	Street:
Muldoon CCTV 2018	3-43 to 3-33	Anchorage	Muldoon
Start date/time:	Direction:	Weather:	Location code:
7/23/2018 11:44 AM	U		
Shape:	Material:	Height:	Width:
C	CMP	12 in.	

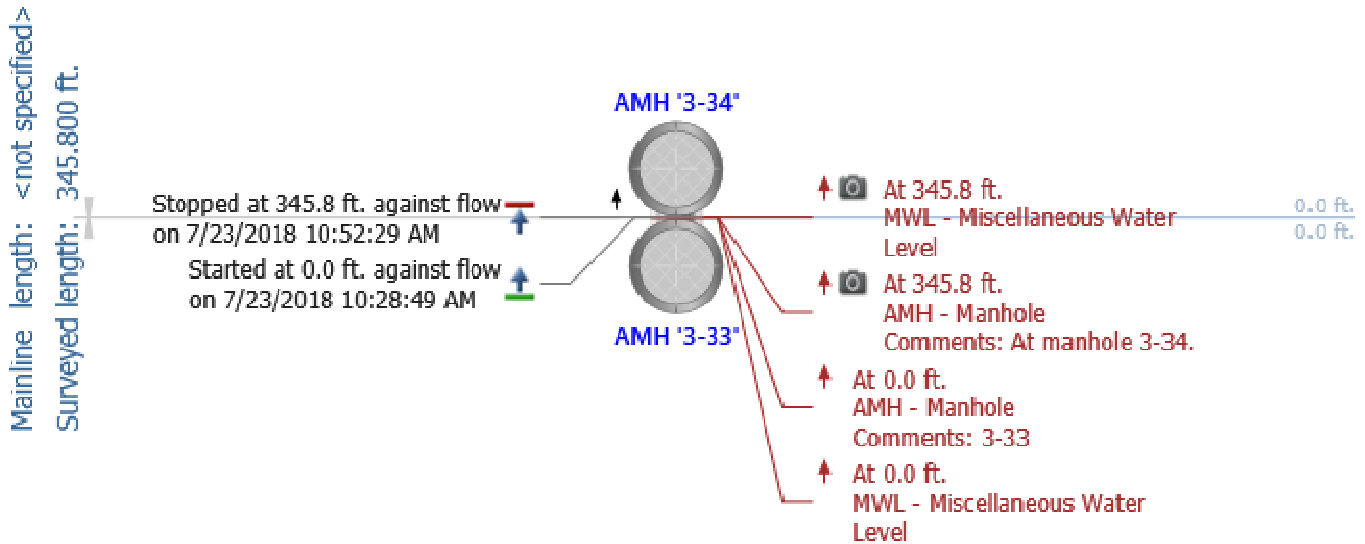


Notes: 3-43 to 3-33

- 12-in. CMP
- 64 LF
- Discoloration 5:00 to 7:00 position
- 0-1" debris. 1-2" of debris 30 LF to 40 LF
- Surface corrosion at pipe ends at joint
- Surface corrosion 5:00 and 7:00 position visible at joint 41 LF
- Surface corrosion 4:00 and 8:00 position 53 LF to end of pipe
- Visible metal loss 8:00 position at 56 LF
- Evidence of corrosion in invert, 56 LF
- Flow: Minimal
- Grade score of: 3

Main Inspections Pipe Run

Project name:	Mainline ID:	City:	Street:
Muldoon CCTV 2018	3-34 to 3-33	Anchorage	Muldoon
Start date/time:	Direction:	Weather:	Location code:
7/23/2018 10:28 AM	U		
Shape:	Material:	Height:	Width:
C	CMP	24 in.	



Notes: 3-34 to 3-33

- 24-in. CMP
- 346 LF
- Surface corrosion visible, 5:00 and 7:00 position
- Surface corrosion at pipe ends at joints
- Surface corrosion visible in invert
- Minimal debris
- Multiple 1/2-1" deformations, 12:00 position 325 LF
- No major structural defects
- Flow: Minimal
- Grade score of: 2

Storm Drain Structure Summary and Inspection Reports

CR NHS Storm Drain Condition Report
PROJECT NO. 0A310554 / Z591280000

	NHS Storm Drain Structure Conditions Muldoon Road (Boundary Ave. to Northern Lights Blvd.)			Defect Grades: 0=No Defect, 1=Minor Defect, 2=Minor to Moderate Defect, 3=Moderate Defect, 4=Significant Defect, 5=Most Significant Defect											
		Avg. Height	Material	Condition of Components											
Page # in Appendix A	Structure No.	Rim-Invert (in.)	Type	Overall	Cover	Frame	Chimney	Steps	Cone	Reducing Slab	Barrel	Base	Connections (Influent)	Connections (Effluent)	Storm Drain Structure Observations
1	385-373	60	Pre-cast Concrete	1	1	1	1	1	N/A	1	N/A	1	1	N/A	
	385-375	59	Pre-cast Concrete	1	1	1	1	2	N/A	1	N/A	1	1	1	Steps installed below reducing slab
2	385-378	58	Pre-cast Concrete	2	1	1	3	1	N/A	2	N/A	1	1	1	
	385-379	50	Pre-cast Concrete	1	1	1	1	1	1	N/A	N/A	1	1	1	
	385-441	53	Pre-cast Concrete	3	1	1	1	3	N/A	1	N/A	1	2	1	Steps installed below reducing slab, circumferential crack in base, sump debris
	385-443	53	Pre-cast Concrete	2	1	1	1	1	N/A	1	N/A	1	2	2	Circumferential crack in base
3	453-162	56	Pre-cast Concrete	1	1	1	1	1	N/A	1	N/A	1	1	1	
	453-93	72	Pre-cast Concrete	3	1	1	2	N/A	N/A	1	N/A	3	3	2	Missing ladder rungs, 3 grade rings, crack in base
	453-96	42	Pre-cast Concrete	1	1	1	1	N/A	N/A	1	N/A	1	N/A	1	
4	453-92	72	Pre-cast Concrete	1	1	1	1	N/A	N/A	1	N/A	2	3	1	Missing ladder rungs, 3 grade rings, inverts probed in pipes, metal sound
	453-84	N/A	Pre-cast Concrete	1	1	1	1	1	N/A	1	N/A	1	3	1	3 grade rings, cannot measure accurate sump and base depth
	453-81	76	Pre-cast Concrete	1	1	1	2	1	1	N/A	N/A	1	1	1	
5	453-8	86	Pre-cast Concrete	1	1	1	1	1	N/A	1	N/A	1	1	1	
6	453-7	82	Pre-cast Concrete	1	1	1	1	1	N/A	1	N/A	1	1	1	
	453-6	78	Pre-cast Concrete	1	1	1	1	1	N/A	1	N/A	1	1	1	
7	453-2	76	Pre-cast Concrete	1	1	1	1	1	N/A	1	N/A	1	2	1	
9	1298-279	125	Pre-cast Concrete	1	1	1	1	1	1	1	N/A	1	1	1	Too much debris for accurate sump and base depth
10	282-9	90	Pre-cast Concrete	1	1	1	N/A	1	1	N/A	1	1	1	1	Too much debris for accurate sump and base depth
11	282-10	68	Pre-cast Concrete	2	1	1	N/A	1	1	N/A	N/A	1	3	1	Additional step on west side of manhole
	282-13	64	Pre-cast Concrete	1	1	1	3	1	N/A	1	1	1	1	1	2 steps SW, one SE, 1st step poly, bottom 2 metal
	282-20	28	Pre-cast Concrete	3	1	1	3	1	3	N/A	N/A	3	3	1	Cracks in cone and base, broken chimney bricks, too much debris for accurate sump and base depth
12	282-21	66	Pre-cast Concrete	2	1	2	3	1	1	N/A	N/A	2	2	2	Too much debris for accurate sump and base depth, crack in base
	282-23	58	Pre-cast Concrete	2	1	1	3	1	1	N/A	N/A	1	1	1	Too much debris for accurate sump and base depth
13	282-28	63	Pre-cast Concrete	1	1	1	1	1	1	N/A	N/A	1	1	1	Too much debris for accurate sump and base depth, inverts appeared sound
15	3-52	55	Pre-cast Concrete	2	1	1	2	1	N/A	1	N/A	3	1	2	Bricks between frame and chimney broken/missing, crack in base
	3-50	56	Pre-cast Concrete	3	1	1	2	1	N/A	1	N/A	3	3	1	Crack in base, 2" bricks broken, 5" chimney below

CR NHS Storm Drain Condition Report
PROJECT NO. 0A310554 / Z591280000

	NHS Storm Drain Structure Conditions Muldoon Road (Boundary Ave. to Northern Lights Blvd.)			Defect Grades: 0=No Defect, 1=Minor Defect, 2=Minor to Moderate Defect, 3=Moderate Defect, 4=Significant Defect, 5=Most Significant Defect											
		Avg. Height	Material	Condition of Components											
Page # in Appendix A	Structure No.	Rim-Invert (in.)	Type	Overall	Cover	Frame	Chimney	Steps	Cone	Reducing Slab	Barrel	Base	Connections (Influent)	Connections (Effluent)	Storm Drain Structure Observations
16	3-47	59	Pre-cast Concrete	3	1	1	3	1	N/A	1	N/A	4	2	2	
	3-45	60	Pre-cast Concrete	1	1	1	2	1	N/A	1	N/A	1	2	2	2 Grade Rings 2" and 6"
17	3-28	59	Pre-cast Concrete	3	1	1	1	1	N/A	1	N/A	4	5	2	Steps unusable, bricks between frame and chimney broken, crack in base, missing grout
	3-29	55	Pre-cast Concrete	3	1	1	4	1	N/A	1	N/A	2	3	3	Broken chimney, inverts of pipes soft
	3-30	N/A	Pre-cast Concrete	3	1	1	1	1	1	N/A	N/A	3	3	2	Crack in base, metal loss in inverts
	3-32	66	Pre-cast Concrete	3	1	3	4	1	N/A	1	N/A	3	3	3	Curb inlet broken, chimney broken/missing, crack in base, inverts probed metal sound
18	3-33	68	Pre-cast Concrete	1	1	1	2	1	1	N/A	N/A	1	5	1	

CR NHS STORM DRAIN INSPECTIONS

STORM DRAIN STRUCTURE INSPECTION REPORT

Catch Basin # **385-373**

Date, Inspector(s), & Location

Date of Inspection: Thursday, September 20, 2018

Inspector(s): Stratton

General Location: 111 MULDOON RD

Pipe Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

	Diameter	Type	In-Effluent	Rim to Invert	Depth of Flow	Fill Depth	Connection Type	Grade Score
1			Influent					
2	24"	RCP	Influent	60"			Grouted	1
3	12"	CMP	Influent	42"	0"	0"	Grouted	1
4	36"	CMP	Effluent	61"	3"			

Structure Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

Overall Structural Condition: 1

Steps: 2, Metal, score 1

Depth of Sump: 6"

Depth of Debris in Sump: 0" to 6"

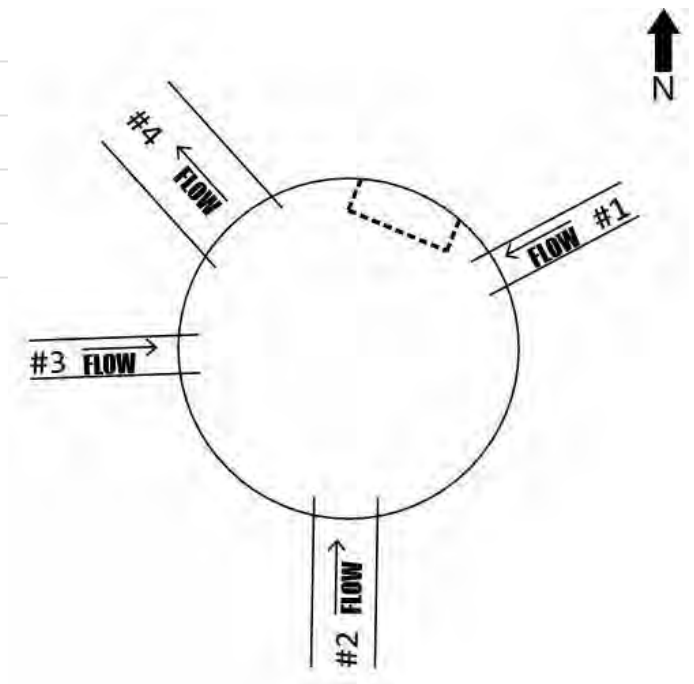
	Component	Material	Geometry	Grade Score	Dim A	Dim B	Height
1	Cover - Standard Cover	Metal	Round	1	22"	18"	
2	Frame	Metal	Round	1			7"
3	Chimney	Precast Concrete	Round	1			4"
4	Reducing Slab	Precast Concrete	Round	1	24"		8"
5	Base	Precast Concrete	Round	1	48"		48"

Primary Comments:

Additional Comments:



PIPE ID	
1	to 385-373
2	385-375 to 385-373
3	385-374 to 385-373
4	385-373 to



Line/Connection Comments:

385-375 to 385-373

inspection completed 9/20/18 329.2

385-374 to 385-373

INSPECTION COMPLETED 9/20/18 78.9'



385-373 Facing North



Cover



Frame and Chimney, northwest is up



North is up



Northeast is up



West influent connectino



South influent connection

CR NHS STORM DRAIN INSPECTIONS

STORM DRAIN STRUCTURE INSPECTION REPORT

Catch Basin # **385-375**

Date, Inspector(s), & Location

Date of Inspection: Thursday, September 20, 2018

Inspector(s): Stratton

General Location: 171 MULDOON RD

Pipe Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

	Diameter	Type	In-Effluent	Rim to Invert	Depth of Flow	Fill Depth	Connection Type	Grade Score
1	24"	RCP	Effluent	59"	2"	0"	Grouted	1
2	24"	RCP	Influent	59"	0"	0"	Grouted	1
3	12"	CMP	Influent	56"	0"	1"	Grouted	1

Structure Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

Overall Structural Condition: 1

Steps: 1, Metal, score 2

Depth of Sump: 11"

Depth of Debris in Sump: 0" to 6"

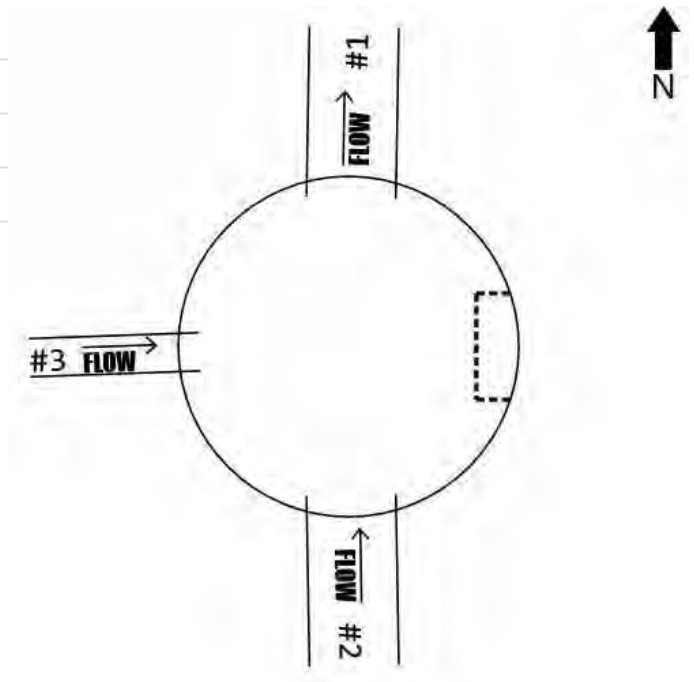
	Component	Material	Geometry	Grade Score	Dim A	Dim B	Height
1	Cover - Standard Cover	Metal	Rectangular	1	22"	18"	
2	Frame	Metal	Round	1			7"
3	Chimney	Precast Concrete	Round	1			6"
4	Reducing Slab	Precast Concrete	Round	1	24"		8"
5	Base	Precast Concrete	Round	1	48"		42"

Primary Comments: steps installed under reducing slab.

Additional Comments:



	PIPE ID
1	385-375 to 385-373
2	385-377 to 385-375
3	385-376 to 385-375



Line/Connection Comments:

385-375 to 385-373

inspection completed 9/20/18 329.2

385-377 to 385-375

inspection completed 9/20/18 275.5'

385-376 to 385-375

inspection 9/20/18 Stopped 63.3' due to mud. Can see next mh from stop.



385-375 Facing North



Frame and Chimney



North is up



West is up

CR NHS STORM DRAIN INSPECTIONS

STORM DRAIN STRUCTURE INSPECTION REPORT

Manhole # **385-378**

Date, Inspector(s), & Location

Date of Inspection: Tuesday, September 25, 2018

Inspector(s): Other

General Location: 180 MULDOON RD

Pipe Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

	Diameter	Type	In-Effluent	Rim to Invert	Depth of Flow	Fill Depth	Connection Type	Grade Score
1	18"	CMP	Effluent	58"	2"		Grouted	1
2	12"	CMP	Influent	58"	2"		Grouted	1
3	12"	CMP	Influent	57"			Grouted	1
4	12"	CMP	Influent	58"	2"		Grouted	1

Structure Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

Overall Structural Condition: 2

Steps: 3, Metal, score 1

Depth of Sump: 9"

Depth of Debris in Sump:

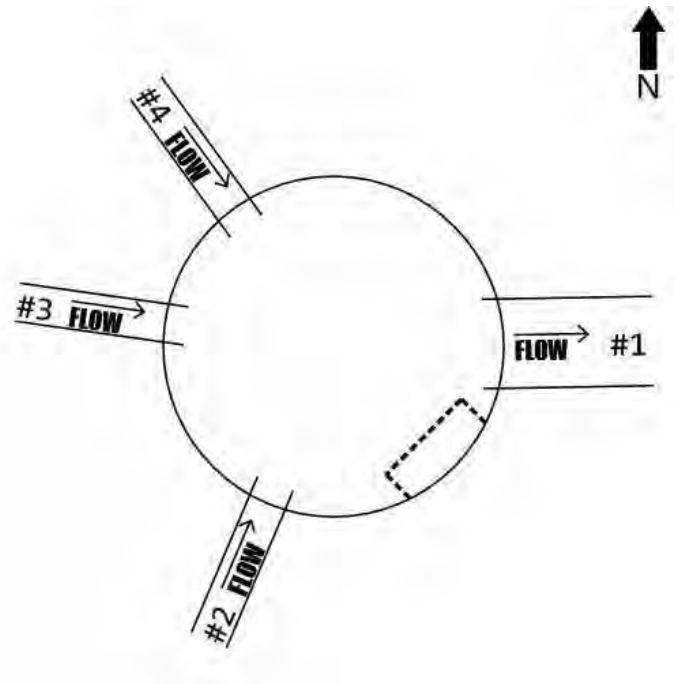
	Component	Material	Geometry	Grade Score	Dim A	Dim B	Height
1	Cover - Standard Cover	Metal	Round	1	25"		
2	Frame	Metal	Round	1			7"
3	Chimney	Precast Concrete	Round	3			2"
4	Chimney	Precast Concrete	Round	3			4"
5	Reducing Slab	Precast Concrete	Round	2			8"
6	Base	Precast Concrete	Round	1	48"		46"

Primary Comments:

Additional Comments:



PIPE ID	
1	385-378 to 385-377
2	385-385 to 385-378
3	385-379 to 385-378
4	385-384 to 385-378



Line/Connection Comments:

385-378 to 385-377

Inspection completed 65' 9/25/18

385-385 to 385-378

STOPPED BY DEBRIS 10' 9/25/18

385-379 to 385-378

INSPECTION COMPLETED 9/25/18 106'

385-384 to 385-378

Inspection completed 9/25/18 28'



Effluent pipe connection



Influent pipe connections



385-378 Facing South



Cover and Frame



Frame and Chimney

CR NHS STORM DRAIN INSPECTIONS

STORM DRAIN STRUCTURE INSPECTION REPORT

Manhole # **385-379**

Date, Inspector(s), & Location

Date of Inspection: Tuesday, September 25, 2018

Inspector(s): Stratton

General Location: 180 MULDOON RD

Pipe Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

	Diameter	Type	In-Effluent	Rim to Invert	Depth of Flow	Fill Depth	Connection Type	Grade Score
1	10"	CMP	Influent	52"	2"		Grouted	1
2	12"	CMP	Effluent	50"			Grouted	1
3		CMP	Influent	44"	0"		Grouted	1
4	12"	CMP	Influent	50"	0"		Grouted	1

Structure Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

Overall Structural Condition: 1

Steps: 2, Metal, score 1

Depth of Sump: 7"

Depth of Debris in Sump:

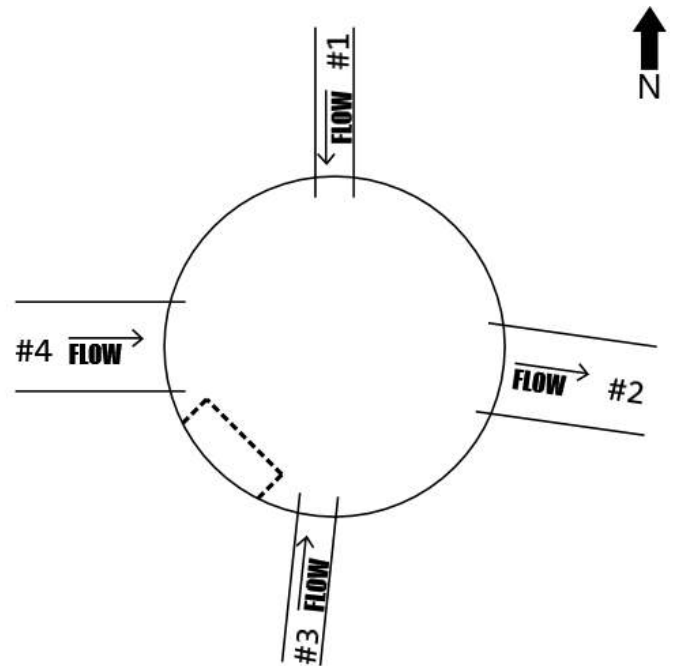
	Component	Material	Geometry	Grade Score	Dim A	Dim B	Height
1	Cover - Standard Cover	Metal	Round	1	25"		
2	Frame	Metal	Round	1			6"
3	Chimney	Precast Concrete	Round	1			6"
4	Cone	Precast Concrete	Round	1			24"
5	Base	Precast Concrete	Round	1			23"

Primary Comments:

Additional Comments:



PIPE ID	
1	385-383 to 385-379
2	385-379 to 385-378
3	385-379A to 385-379
4	385-380 to 385-379



Line/Connection Comments:

385-379 to 385-378

INSPECTION COMPLETED 9/25/18 106'



Pipe #2 Connection



Pipe #4 Connection



North is up



Manhole Interior



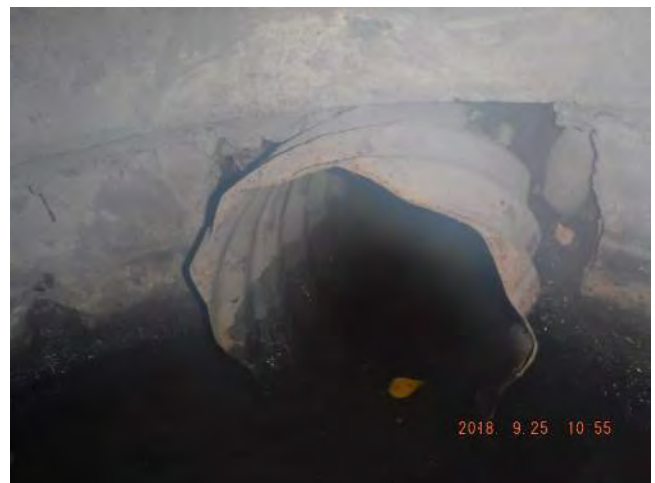
Frame and Chimney



385-379 Facing East



Pipe #1 Connection



Pipe #3 Connection

CR NHS STORM DRAIN INSPECTIONS

STORM DRAIN STRUCTURE INSPECTION REPORT

Catch Basin # **385-441**

Date, Inspector(s), & Location

Date of Inspection: Thursday, September 20, 2018

Inspector(s): Stratton

General Location: 207 MULDOON RD

Pipe Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

	Diameter	Type	In-Effluent	Rim to Invert	Depth of Flow	Fill Depth	Connection Type	Grade Score
1	18"	DIP	Effluent	53"	0"	0"	Grouted	3
2	10"	CMP	Influent	50"			Grouted	2
3	18"	DIP	Influent	53"	0"	0"	Grouted	3
4	12"	CMP	Influent	51"	0"	0"	Grouted	3

Structure Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

Overall Structural Condition: 3

Steps: 2, Metal, score 3

Depth of Sump: 24"

Depth of Debris in Sump: Greater than 18"

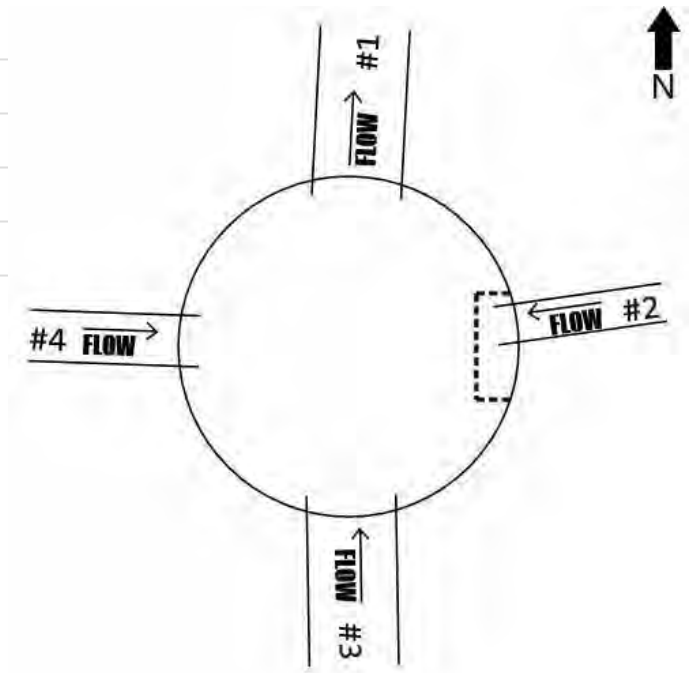
	Component	Material	Geometry	Grade Score	Dim A	Dim B	Height
1	Cover - Standard Cover	Metal	Rectangular	1	22"	18"	
2	Frame	Metal	Round	1			6"
3	Chimney	Precast Concrete	Round	1	24"		2"
4	Reducing Slab	Precast Concrete	Round	1			9"
5	Base	Precast Concrete	Round	3	48"		48"

Primary Comments: steps installed under reducing slab. Base cracked circumferential. sump too full for ACCURATE measurement. 9/20/18

Additional Comments:



	PIPE ID
1	385-441 to 385-377
2	385-441a to 385-441
3	385-443 to 385-441
4	385-442 to 385-441



Line/Connection Comments:

385-441 to 385-377

inspected COMPLETE 9/20/18 54.7'

385-443 to 385-441

inspection completed 9/20/18 invert PROBED METAL APPEARED SOUND 350.4

385-442 to 385-441

invert broken in mh. INSPECTION COMPLETED 9/20/18 64.8'



385-441 Facing North



Cover and Frame, North is up



Frame and Chimney



North is up



East is up

CR NHS STORM DRAIN INSPECTIONS

STORM DRAIN STRUCTURE INSPECTION REPORT

Manhole # **385-443**

Date, Inspector(s), & Location

Date of Inspection: Thursday, September 20, 2018

Inspector(s): Stratton

General Location: 283 MULDOON RD

Pipe Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

	Diameter	Type	In-Effluent	Rim to Invert	Depth of Flow	Fill Depth	Connection Type	Grade Score
1	12"	CMP	Influent	53"		0"	Grouted	2
2	12"	CMP	Influent	44"	0"	0"	Grouted	1
3	12"	CMP	Influent	53"	0"	0"	Grouted	1
4	18"	DIP	Effluent	54"	0"	0"	Grouted	2

Structure Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

Overall Structural Condition: 2

Steps: 3, Metal, score 1

Depth of Sump: 24"

Depth of Debris in Sump: 0" to 6"

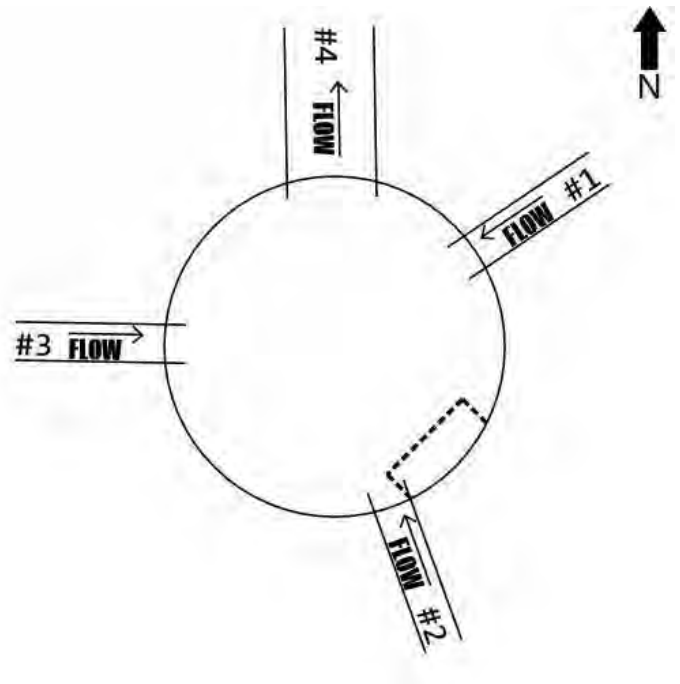
	Component	Material	Geometry	Grade Score	Dim A	Dim B	Height
1	Cover - Standard Cover	Metal	Round	1	32"		
2	Frame	Metal	Round	1			9"
3	Chimney	Precast Concrete	Round	1			7"
4	Reducing Slab	Precast Concrete	Round	1			9"
5	Base	Precast Concrete	Round	3	48"		54"

Primary Comments: inspected COMPLETE 9/20/18 Base circumferential cracked

Additional Comments:



	PIPE ID
1	385-443a to 385-443
2	385-444 to 385-443
3	385-445 to 385-443
4	385-443 to 385-441



Line/Connection Comments:

385-444 to 385-443

Inspected COMPLETE 9/20/18 30.1'

385-445 to 385-443

INSPECTION STOPPED BY DEBRIS 63.6' APPROXIMATELY 4' FROM END. 9/20/18

385-443 to 385-441

inspection completed 9/20/18 invert PROBED METAL APPEARED SOUND 350.4



385-443 Facing South



Cover



North is up



Frame and chimney



Northeast and southeast connection



Northwest is up

CR NHS STORM DRAIN INSPECTIONS

STORM DRAIN STRUCTURE INSPECTION REPORT

Manhole # **453-162**

Date, Inspector(s), & Location

Date of Inspection: Wednesday, August 22, 2018

Inspector(s): Miller

General Location: 322 MULDOON RD

Pipe Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

	Diameter	Type	In-Effluent	Rim to Invert	Depth of Flow	Fill Depth	Connection Type	Grade Score
1	12"	CMP	Influent	58"			Grouted	1
2	30"	Other (See Comment)	Effluent	58"			Grouted	1
3	18"	CPEP	Influent	58"			Grouted	1

Structure Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

Overall Structural Condition: 1

Steps: 4, Polyvinyl Coated, score 1

Depth of Sump:

Depth of Debris in Sump: 0" to 6"

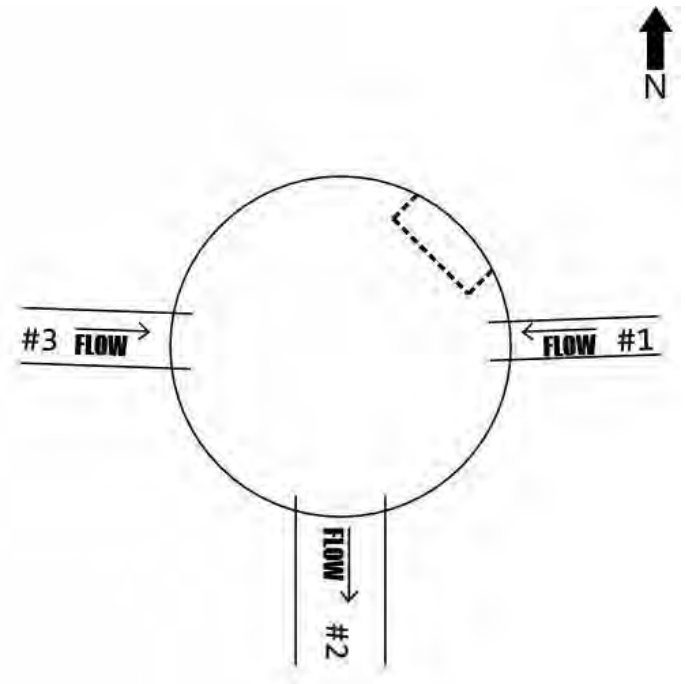
	Component	Material	Geometry	Grade Score	Dim A	Dim B	Height
1	Cover - Standard Cover	Metal	Round	1	25"		
2	Frame	Metal	Round	1			6"
3	Chimney	Precast Concrete	Round	1			10"
4	Reducing Slab	Precast Concrete	Round	1			10"
5	Base	Precast Concrete	Round	1			55"

Primary Comments:

Additional Comments:



	PIPE ID
1	453-166 to 453-162
2	453-162 to 453-93
3	453-163 to 453-162



Line/Connection Comments:

453-166 to 453-162

METAL APPEARED SOUND IN DOWNSTREAM INVERT INSPECTED 41.9' COMPLETE 8/23/18

453-162 to 453-93

184.8' inspected COMPLETE 8/22/18 FRP

453-163 to 453-162

16.9' INSPECTED COMPLETE 8/22/18



453-162 West is up



Cover



Frame and Chimney, North is up



Chimney and reducing slab, north is up



East influent pipe connection



West and south pipe connections

CR NHS STORM DRAIN INSPECTIONS

STORM DRAIN STRUCTURE INSPECTION REPORT

Manhole # **453-93**

Date, Inspector(s), & Location

Date of Inspection: Wednesday, August 22, 2018

Inspector(s): Miller

General Location: 332 MULDOON RD

Pipe Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

	Diameter	Type	In-Effluent	Rim to Invert	Depth of Flow	Fill Depth	Connection Type	Grade Score
1	30"	Other (See Comment)	Influent	72"			Grouted	2
2	24"	CMP	Influent	72"			Grouted	3
3	30"	Other (See Comment)	Effluent	72"			Grouted	2
4	12"	CMP	Influent	70"			Grouted	3

Structure Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

Overall Structural Condition: 3

Steps: 0

Depth of Sump:

Depth of Debris in Sump:

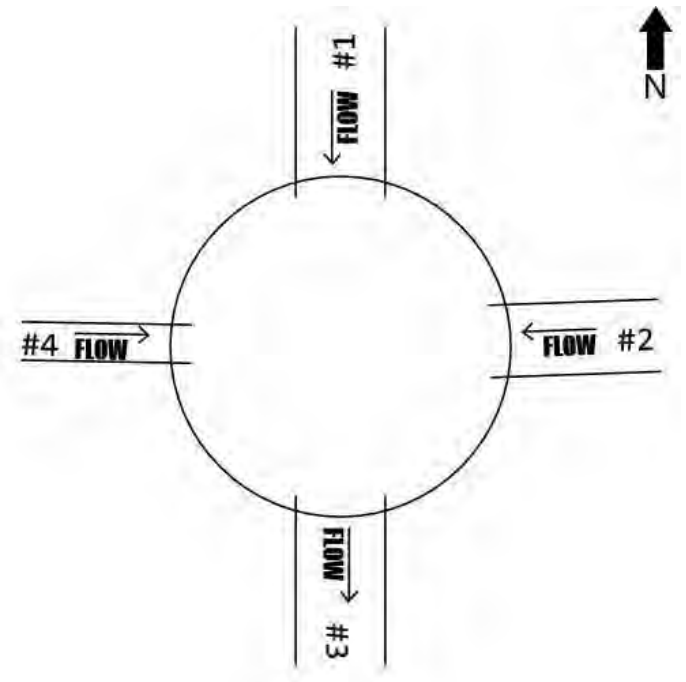
	Component	Material	Geometry	Grade Score	Dim A	Dim B	Height
1	Cover - Standard Cover	Metal	Round	1	25"		
2	Frame	Metal	Round	1			8"
3	Chimney	Precast Concrete	Round	2			15"
4	Reducing Slab	Precast Concrete	Round	1			8"
5	Base	Precast Concrete	Round	3			48"

Primary Comments: MISSING RUNGS

Additional Comments: 3 CHIMNEYS, CRACK IN BASE



	PIPE ID
1	453-162 to 453-93
2	453-94 to 453-93
3	453-93 to 453-92
4	453-161 to 453-93



Line/Connection Comments:

453-162 to 453-93

184.8' inspected COMPLETE 8/22/18 FRP

453-94 to 453-93

62.1' INSPECTED COMPLETE 8/22/18 METAL LOSS IN DOWNSTREAM INVERT

453-93 to 453-92

FRP INSPECTED 371.9' COMPLETE 8/22/18

453-161 to 453-93

Surface CORROSION INVERT Inspected 26.5' COMPLETE 8/23/18



453-93 Facing East



Cover



Frame



Chimneys and reducing slab



West influent pipe connection



Influent mainline connection



Effluent mainline connection

CR NHS STORM DRAIN INSPECTIONS

STORM DRAIN STRUCTURE INSPECTION REPORT

Catchbasin Manhole # 453-96

Date, Inspector(s), & Location

Date of Inspection: Thursday, September 20, 2018

Inspector(s): Stratton

General Location: 317 MULDOON RD

Pipe Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

	Diameter	Type	In-Effluent	Rim to Invert	Depth of Flow	Fill Depth	Connection Type	Grade Score
1	12"	CMP	Effluent	42"	0"		Grouted	1

Structure Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

Overall Structural Condition: 1

Steps: 0

Depth of Sump: 12"

Depth of Debris in Sump: 0" to 6"

	Component	Material	Geometry	Grade Score	Dim A	Dim B	Height
1	Cover - Standard Cover	Metal	Round	1	25"		
2	Frame	Metal	Round	1			6"
3	Chimney	Precast Concrete	Round	1			7"
4	Reducing Slab	Precast Concrete	Round	1			9"
5	Base	Precast Concrete	Round	1	48"		32"

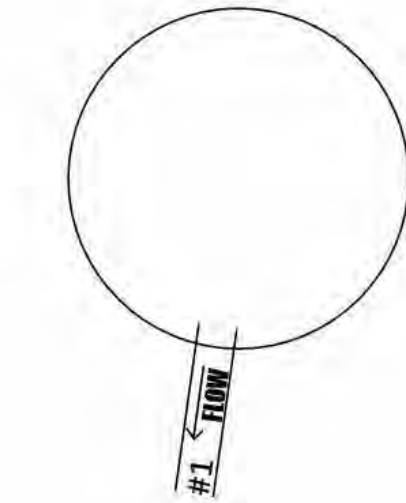
Primary Comments:

Additional Comments:



PIPE ID

1 453-96 to 453-94



Line/Connection Comments:

453-96 to 453-94

Inspection completed 9/20/18. 18.8' VISUAL ZOOM THROUGH PIPE TO NEXT MH



453-96 Location



Cover





Frame and Chimney



Chimney

CR NHS STORM DRAIN INSPECTIONS

STORM DRAIN STRUCTURE INSPECTION REPORT

Manhole # **453-92**

Date, Inspector(s), & Location

Date of Inspection: Thursday, August 23, 2018

Inspector(s): Miller

General Location: 382 MULDOON RD

Pipe Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

	Diameter	Type	In-Effluent	Rim to Invert	Depth of Flow	Fill Depth	Connection Type	Grade Score
1	30"	Other (See Comment)	Influent	72"			Grouted	1
2	12"	CMP	Influent	50"			Grouted	3
3	30"	Other (See Comment)	Effluent	72"			Grouted	1
4	12"	CMP	Influent	50"			Grouted	2

Structure Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

Overall Structural Condition: 1

Steps: 0

Depth of Sump: 5"

Depth of Debris in Sump: 0" to 6"

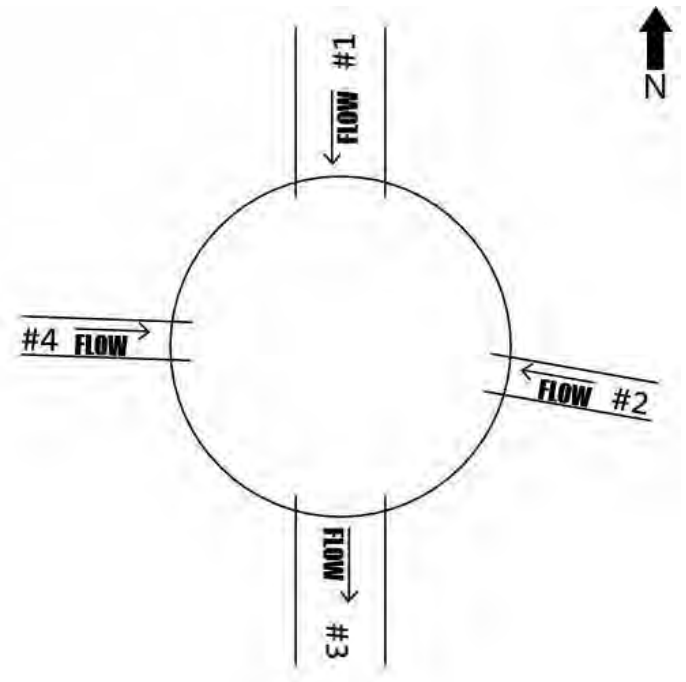
	Component	Material	Geometry	Grade Score	Dim A	Dim B	Height
1	Cover - Standard Cover	Metal	Round	1	25"		
2	Frame	Metal	Round	1			7"
3	Chimney	Precast Concrete	Round	1			20"
4	Reducing Slab	Precast Concrete	Round	1			8"
5	Base	Precast Concrete	Round	2			42"

Primary Comments: NO STEPS, 3 GRADE RINGS

Additional Comments: PROBED INVERTS METAL SOUND



	PIPE ID
1	453-93 to 453-92
2	453-170 to 453-92
3	453-92 to 453-84
4	453-171 to 453-92



Line/Connection Comments:

453-93 to 453-92

FRP INSPECTED 371.9' COMPLETE 8/22/18

453-170 to 453-92

43' INSPECTED COMPLETE THE 8/23/18

453-92 to 453-84

FRP Inspected 248.9' COMPLETE 8/22/18

453-171 to 453-92

20' INSPECTED COMPLETE 8/23/18



453-92 Facing West



Cover



Frame and Chimney



Chimney, offset from reducing slab



West influent pipe connection

CR NHS STORM DRAIN INSPECTIONS

STORM DRAIN STRUCTURE INSPECTION REPORT

Manhole # **453-84**

Date, Inspector(s), & Location

Date of Inspection: Wednesday, August 22, 2018

Inspector(s): Miller

General Location: 500 MULDOON RD

Pipe Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

	Diameter	Type	In-Effluent	Rim to Invert	Depth of Flow	Fill Depth	Connection Type	Grade Score
1	30"	Other (See Comment)	Influent				Grouted	1
2	12"	CMP	Influent				Grouted	3
3	30"	Other (See Comment)	Effluent				Grouted	1
4	12"	CMP	Influent				Grouted	3

Structure Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

Overall Structural Condition: 1

Steps: 1, Metal, score 1

Depth of Sump:

Depth of Debris in Sump:

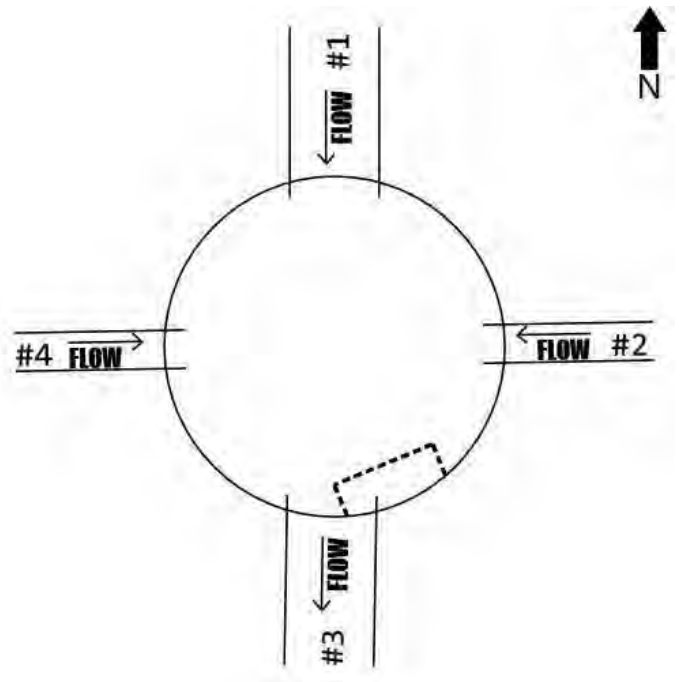
	Component	Material	Geometry	Grade Score	Dim A	Dim B	Height
1	Cover - Standard Cover	Metal	Round	1	25"		
2	Frame	Metal	Round	1			7"
3	Chimney	Precast Concrete	Round	1			16"
4	Reducing Slab	Precast Concrete	Round	1			7"
5	Base	Precast Concrete	Round	1			

Primary Comments: 3 GRADE RINGS

Additional Comments: CANNOT MEASURE ACCURATE SUMP AND BASE DEPTH



	PIPE ID
1	453-92 to 453-84
2	453-87 to 453-84
3	453-84 to 453-81
4	453-85 to 453-84



Line/Connection Comments:

453-92 to 453-84

FRP Inspected 248.9' COMPLETE 8/22/18

453-87 to 453-84

INVERT SOFT Inspected 43' COMPLETE 8/23/18

453-84 to 453-81

Inspected 97.3' COMPLETE 8/22/18 FRP

453-85 to 453-84

METAL LOSS IN INVERT 16.8' INSPECTED COMPLETE 8/23/18



453-84 Facing West



Cover



Frame



Chimneys and Reducing slab



West influent pipe connection



East influent pipe connection

CR NHS STORM DRAIN INSPECTIONS

STORM DRAIN STRUCTURE INSPECTION REPORT

Manhole # **453-81**

Date, Inspector(s), & Location

Date of Inspection: Thursday, August 23, 2018

Inspector(s): Miller

General Location: 500 MULDOON RD

Pipe Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

	Diameter	Type	In-Effluent	Rim to Invert	Depth of Flow	Fill Depth	Connection Type	Grade Score
1	30"	Other (See Comment)	Influent	76"			Grouted	1
2	12"	CMP	Influent	59"			Grouted	1
3	30"	Other (See Comment)	Effluent	76"			Grouted	1
4	12"	CMP	Influent	59"			Grouted	1

Structure Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

Overall Structural Condition: 1

Steps: 3, Polyvinyl Coated, score 1

Depth of Sump: 9"

Depth of Debris in Sump: 0" to 6"

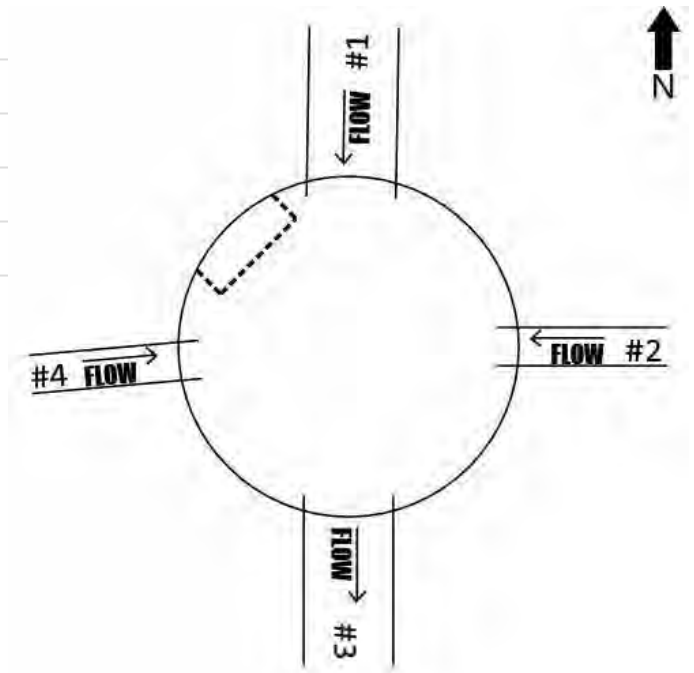
	Component	Material	Geometry	Grade Score	Dim A	Dim B	Height
1	Cover - Standard Cover	Metal	Round	1	25"		
2	Frame	Metal	Round	1			8"
3	Chimney	Precast Concrete	Round	2			10"
4	Cone	Precast Concrete	Round	1			24"
5	Base	Precast Concrete	Round	1			42"

Primary Comments:

Additional Comments:



	PIPE ID
1	453-84 to 453-81
2	453-82 to 453-81
3	453-81 to 453-9
4	453-83 to 453-81



Line/Connection Comments:

453-84 to 453-81

Inspected 97.3' COMPLETE 8/22/18 FRP

453-82 to 453-81

42.9' INSPECTED COMPLETE 8/23/18 DOWNSTREAM INVERT SOUND

453-81 to 453-9

357.1' INSPECTED COMPLETE 8/22/18 FRP

453-83 to 453-81

17' INSPECTED COMPLETE 8/23/18 DOWNSTREAM INVERT METAL LOSS



453-81 Facing East



Cover



Frame, North is up



North is up



West influent pipe connection



East influent pipe connection

CR NHS STORM DRAIN INSPECTIONS

STORM DRAIN STRUCTURE INSPECTION REPORT

Manhole # **453-8**

Date, Inspector(s), & Location

Date of Inspection: Wednesday, August 22, 2018

Inspector(s): Miller

General Location: 620 MULDOON RD

Pipe Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

	Diameter	Type	In-Effluent	Rim to Invert	Depth of Flow	Fill Depth	Connection Type	Grade Score
1	12"	CMP	Influent	56"			Grouted	1
2	36"	Other (See Comment)	Effluent	86"			Grouted	1
3	12"	CMP	Influent	56"			Grouted	1
4	36"	Other (See Comment)	Influent	86"			Grouted	1

Structure Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

Overall Structural Condition: 1

Steps: 5, Metal, score 1

Depth of Sump:

Depth of Debris in Sump:

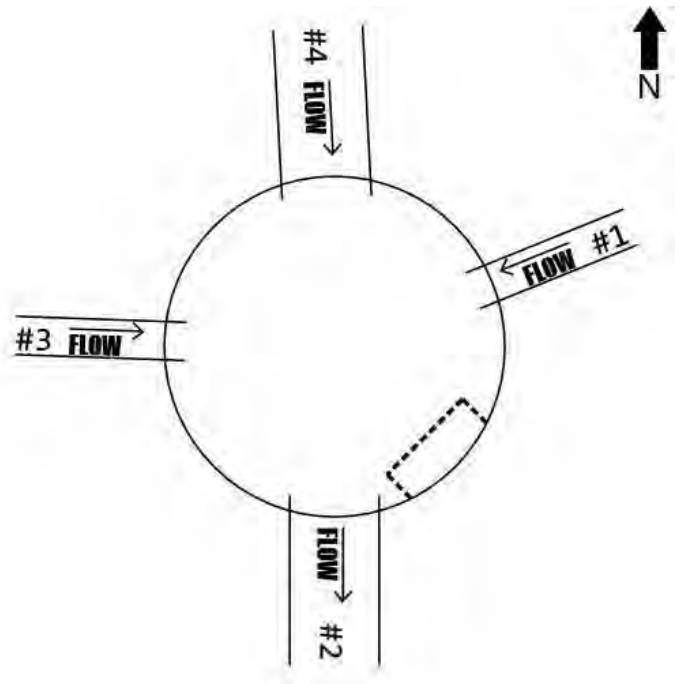
	Component	Material	Geometry	Grade Score	Dim A	Dim B	Height
1	Cover - Standard Cover	Metal	Round	1	25"		
2	Frame	Metal	Round	1			7"
3	Chimney	Precast Concrete	Round	1			7"
4	Reducing Slab	Precast Concrete	Round	1			8"
5	Base	Precast Concrete	Round	1			68"

Primary Comments:

Additional Comments:



	PIPE ID
1	453-172 to 453-8
2	453-8 to 453-7
3	453-173 to 453-8
4	453-9 to 453-8



Line/Connection Comments:

453-172 to 453-8

46.2' INSPECTED COMPLETE 8/23/18

453-8 to 453-7

268.4' INSPECTED COMPLETE 8/22/18 FRP

453-173 to 453-8

16' INSPECTED COMPLETE 8/23/18

453-9 to 453-8

FRP 126.4' INSPECTED COMPLETE 8/22/18



453-8 Facing East



South effluent mainline connection



West influent pipe connection



Cover



Frame and chimney, north is up



North is up



Northeast influent pipe connection



North influent mainline connection

CR NHS STORM DRAIN INSPECTIONS

STORM DRAIN STRUCTURE INSPECTION REPORT

Manhole # **453-7**

Date, Inspector(s), & Location

Date of Inspection: Thursday, August 23, 2018

Inspector(s): Miller

General Location: 700 MULDOON RD

Pipe Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

	Diameter	Type	In-Effluent	Rim to Invert	Depth of Flow	Fill Depth	Connection Type	Grade Score
1	36"	Other (See Comment)	Influent	82"			Grouted	1
2	12"	CMP	Influent	82"			Grouted	1
3	36"	Other (See Comment)	Effluent	82"			Grouted	1
4	12"	CMP	Influent	82"			Grouted	1

Structure Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

Overall Structural Condition: 1

Steps: 4, Metal, score 1

Depth of Sump:

Depth of Debris in Sump:

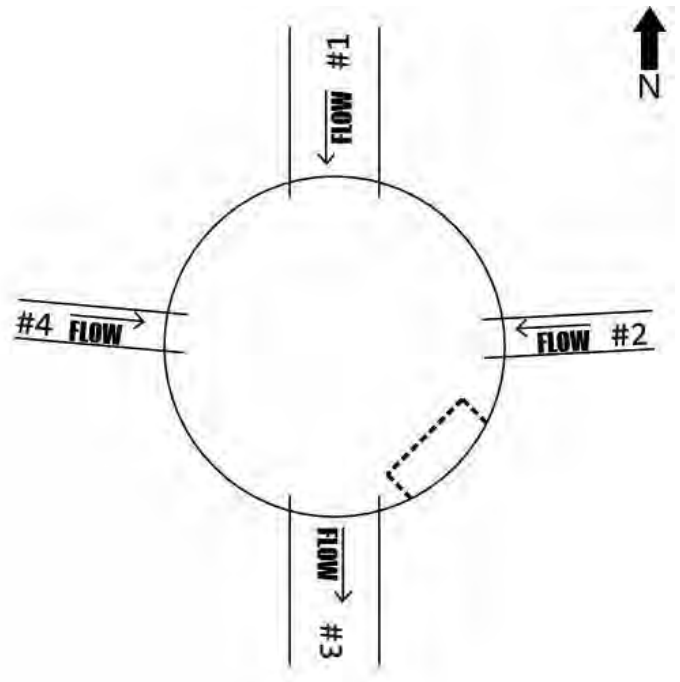
	Component	Material	Geometry	Grade Score	Dim A	Dim B	Height
1	Cover - Standard Cover	Metal	Round	1	25"		
2	Frame	Metal	Round	1			7"
3	Chimney	Precast Concrete	Round	1			20"
4	Reducing Slab	Precast Concrete	Round	1			8"
5	Base	Precast Concrete	Round	1			56"

Primary Comments:

Additional Comments:



	PIPE ID
1	453-8 to 453-7
2	453-174 to 453-7
3	453-7 to 453-6
4	453-175 to 453-7



Line/Connection Comments:

453-8 to 453-7

268.4' INSPECTED COMPLETE 8/22/18 FRP

453-174 to 453-7

34.5' INSPECTED COMPLETE STOPPED BY DEFORMATION 8/23/18

453-7 to 453-6

FRP 268.5' INSPECTED COMPLETE THE 8/22/18

453-175 to 453-7

16' INSPECTED COMPLETE 8/23/18



453-7 Facing West



Cover



Frame, North is up



Chimneys and Reducing slab, north is up

CR NHS STORM DRAIN INSPECTIONS

STORM DRAIN STRUCTURE INSPECTION REPORT

Manhole # **453-6**

Date, Inspector(s), & Location

Date of Inspection: Wednesday, August 22, 2018

Inspector(s): Miller

General Location: 7847 OLD HARBOR AVE

Pipe Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

	Diameter	Type	In-Effluent	Rim to Invert	Depth of Flow	Fill Depth	Connection Type	Grade Score
1	36"	Other (See Comment)	Influent	78"			Grouted	1
2	12"	CMP	Influent	58"			Grouted	1
3	36"	Other (See Comment)	Effluent	78"			Grouted	1
4	12"	CMP	Influent	58"			Grouted	1

Structure Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

Overall Structural Condition: 1

Steps: 4, Metal, score 1

Depth of Sump:

Depth of Debris in Sump:

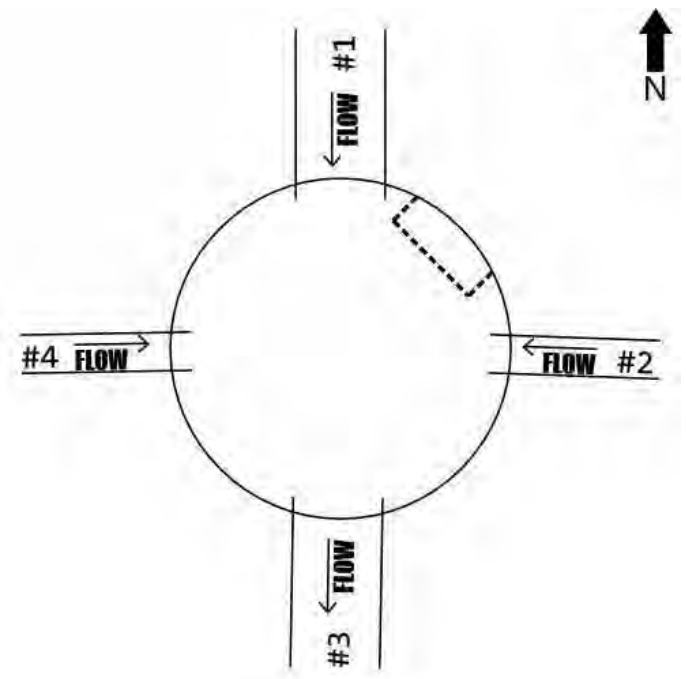
	Component	Material	Geometry	Grade Score	Dim A	Dim B	Height
1	Cover - Standard Cover	Metal	Round	1	25"		
2	Frame	Metal	Round	1			7"
3	Chimney	Precast Concrete	Round	1			18"
4	Reducing Slab	Precast Concrete	Round	1			9"
5	Base	Precast Concrete	Round	1			55"

Primary Comments:

Additional Comments:



	PIPE ID
1	453-7 to 453-6
2	453-176 to 453-6
3	453-6 to 453-3
4	453-177 to 453-6



Line/Connection Comments:

453-7 to 453-6

FRP 268.5' INSPECTED COMPLETE THE 8/22/18

453-6 to 453-3

FRP 267.3' INSPECTED COMPLETE 8/22/18



453-6 Facing East



Cover



Frame, North is up



Chimneys, East is up



Reducing Slab

CR NHS STORM DRAIN INSPECTIONS

STORM DRAIN STRUCTURE INSPECTION REPORT

Manhole # **453-2**

Date, Inspector(s), & Location

Date of Inspection: Wednesday, August 22, 2018

Inspector(s): Miller

General Location: 924 MULDOON RD

Pipe Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

	Diameter	Type	In-Effluent	Rim to Invert	Depth of Flow	Fill Depth	Connection Type	Grade Score
1	36"	Other (See Comment)	Influent	76"			Grouted	1
2	12"	CMP	Influent	58"			Grouted	2
3	36"	Other (See Comment)	Effluent	76"			Grouted	1
4	12"	CMP	Influent	58"			Grouted	2

Structure Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

Overall Structural Condition: 1

Steps: 3, Metal, score 1

Depth of Sump: 6"

Depth of Debris in Sump: 0" to 6"

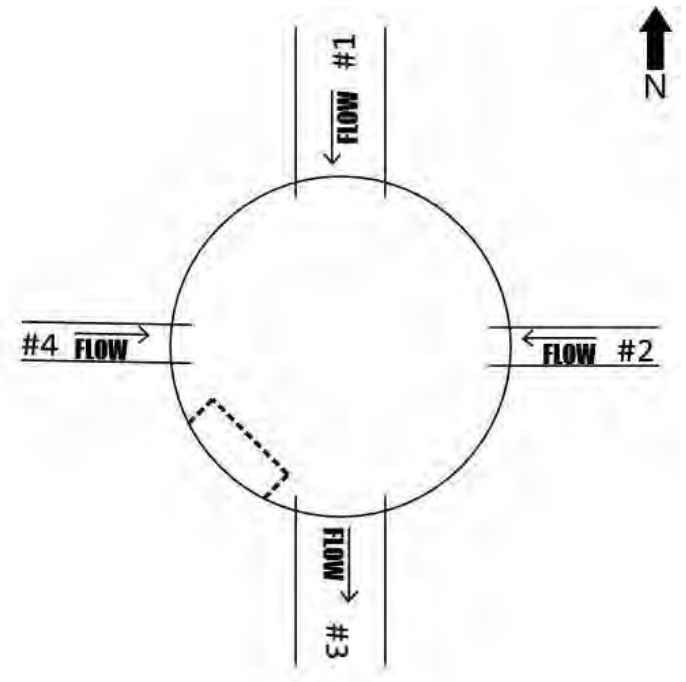
	Component	Material	Geometry	Grade Score	Dim A	Dim B	Height
1	Cover - Standard Cover	Metal	Round	1	25"		
2	Frame	Metal	Round	1			7"
3	Chimney	Precast Concrete	Round	1			13"
4	Reducing Slab	Precast Concrete	Round	1			9"
5	Base	Precast Concrete	Round	1			52"

Primary Comments:

Additional Comments:



	PIPE ID
1	453-3 to 453-2
2	453-178 to 453-2
3	453-2 to 574-4
4	453-179 to 453-2



Line/Connection Comments:

453-3 to 453-2

FRP 119.7' INSPECTED COMPLETE 8/22/18

453-2 to 574-4

FRP 260.6' INSPECTED COMPLETE 8/22/18



453-2 Facing West



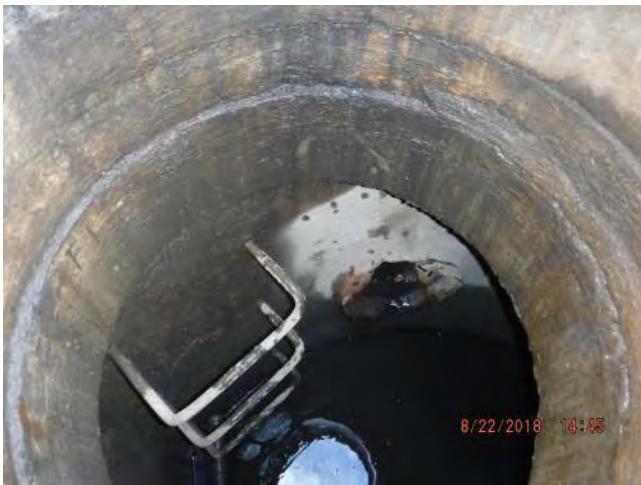
Cover



Frame, North is up



Frame and Chimneys, West is up



Reducing slab, West is up



Thaw line in south effluent pipe

CR NHS STORM DRAIN INSPECTIONS

STORM DRAIN STRUCTURE INSPECTION REPORT

Manhole # **1298-279**

Date, Inspector(s), & Location

Date of Inspection: Friday, August 24, 2018

Inspector(s): Miller

General Location: 7701 DEBARR RD

Pipe Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

	Diameter	Type	In-Effluent	Rim to Invert	Depth of Flow	Fill Depth	Connection Type	Grade Score
1	12"	CMP	Influent	106"			Grouted	1
2	48"	Other (See Comment)	Effluent	125"			Grouted	1
3	12"	CMP	Influent	106"			Grouted	1
4	48"	Other (See Comment)	Influent	125"			Grouted	1

Structure Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

Overall Structural Condition: 1

Steps: 5, Metal, score 1

Depth of Sump:

Depth of Debris in Sump:

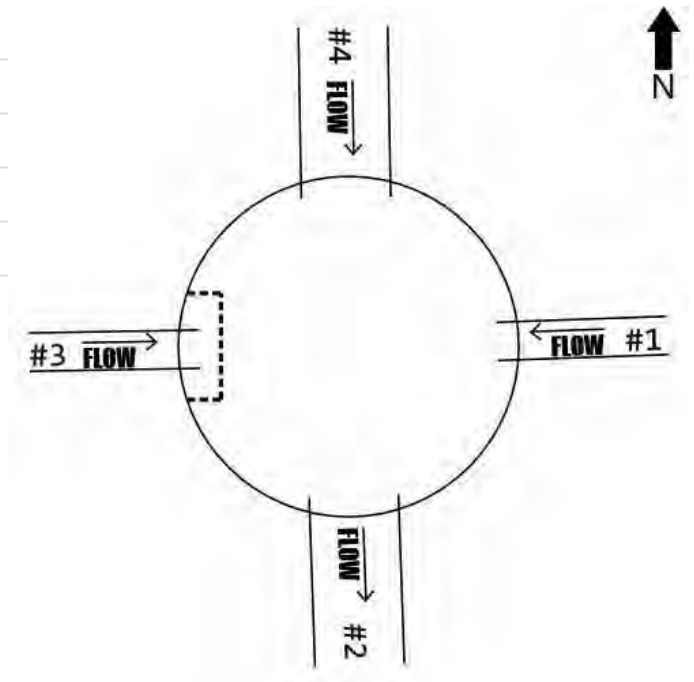
	Component	Material	Geometry	Grade Score	Dim A	Dim B	Height
1	Cover - Standard Cover	Metal	Round	1	25"		
2	Frame	Metal	Round	1			6"
3	Chimney	Precast Concrete	Round	1			12"
4	Cone	Precast Concrete	Round	1			42"
5	Reducing Slab	Precast Concrete	Round	1			6"
6	Base	Precast Concrete	Round	1			65"

Primary Comments: TOO MUCH DEBRIS FOR ACCURATE SUMP AND BASE DEPTH

Additional Comments:



	PIPE ID
1	1298-283 to 1298-279
2	1298-279 to 1298-279A
3	1298-280 to 1298-279
4	1298-281 to 1298-279



Line/Connection Comments:

1298-283 to 1298-279

INSPECTED 45.6' COMPLETE 8/24/18

1298-279 to 1298-279A

INSPECTED 162.7' STOPPED BY DEBRIS 8/24/18 FRP

1298-280 to 1298-279

23.7' INSPECTED COMPLETE 8/24/18

1298-281 to 1298-279

231.4' INSPECTED COMPLETE 8/24/18 FRP



1298-279 Facing West



West influent pipe connection



1298-280 to 1298-279



Frame and Chimneys



Cover



Frame, North is up



East is up



North influent mainline connection



East influent connection



South effluent mainline connection

CR NHS STORM DRAIN INSPECTIONS

STORM DRAIN STRUCTURE INSPECTION REPORT

Catchbasin Manhole # **282-9**

Date, Inspector(s), & Location

Date of Inspection: Monday, August 20, 2018

Inspector(s): Miller, Stratton

General Location: 1450 MULDOON RD

Pipe Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

	Diameter	Type	In-Effluent	Rim to Invert	Depth of Flow	Fill Depth	Connection Type	Grade Score
1	12"	CMP	Influent	75"			Grouted	1
2	24"	RCP	Influent	90"			Grouted	1
3	12"	CPEP	Influent	85"			Grouted	1
4	24"	RCP	Effluent	90"			Grouted	1

Structure Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

Overall Structural Condition: 1

Steps: 4, Metal, score 1

Depth of Sump:

Depth of Debris in Sump: 6" to 18"

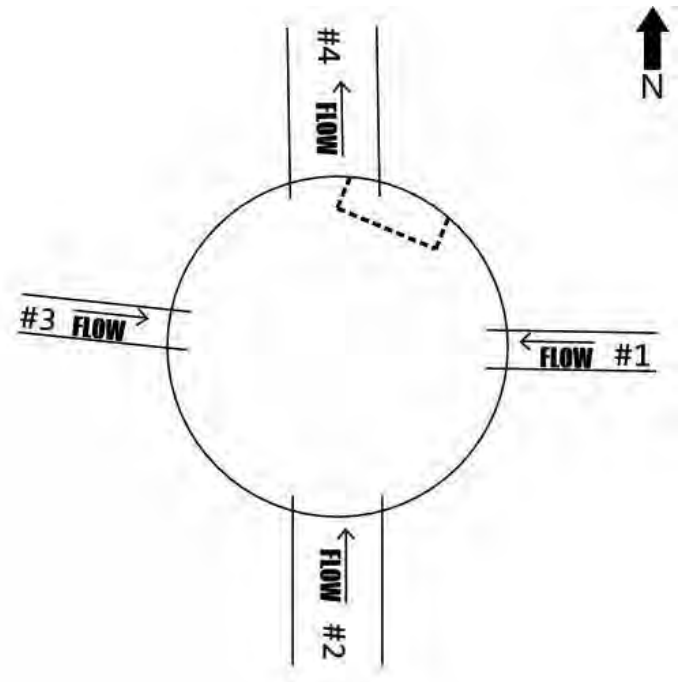
	Component	Material	Geometry	Grade Score	Dim A	Dim B	Height
1	Cover - Standard Cover	Metal	Rectangular	1	23"	23"	
2	Frame	Metal	Rectangular	1			5"
3	Cone	Precast Concrete	Eccentric	1	48"		40"
4	Barrel Section	Precast Concrete	Round	1			12"
5	Base	Precast Concrete	Round	1			40"

Primary Comments: TOO MUCH DEBRIS FOR ACCURATE BASE AND SUMP DEPTH

Additional Comments:



PIPE ID	
1	282-33 to 282-9
2	282-10 to 282-9
3	282-9A to 282-9
4	282-9 to 282-7



Line/Connection Comments:

282-33 to 282-9

Inspected 63.9' COMPLETE 8/20/18 Downstream INVERT PROBED METAL APPEARED SOUND

282-10 to 282-9

INSPECTED 300' COMPLETE 7/31/18 REBAR EXPOSED IN UPSTREAM END

282-9 to 282-7

INSPECTED 129.6' COMPLETE 7/31/18



282-9 Facing South



Cover



Frame, North is up



East is up

CR NHS STORM DRAIN INSPECTIONS

STORM DRAIN STRUCTURE INSPECTION REPORT

Catchbasin Manhole # **282-10**

Date, Inspector(s), & Location

Date of Inspection: Monday, August 20, 2018

Inspector(s): Miller, Stratton

General Location:

Pipe Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

	Diameter	Type	In-Effluent	Rim to Invert	Depth of Flow	Fill Depth	Connection Type	Grade Score
1	24"	RCP	Effluent	68"			Grouted	1
2	12"	CMP	Influent	60"			Grouted	1
3	24"	RCP	Influent	68"			Grouted	3

Structure Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

Overall Structural Condition: 2

Steps: 4, Metal, score 1

Depth of Sump: 6"

Depth of Debris in Sump: 0" to 6"

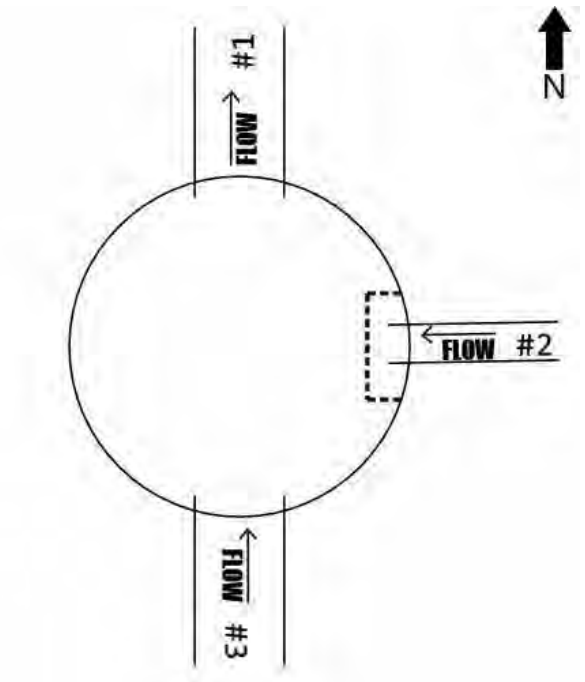
	Component	Material	Geometry	Grade Score	Dim A	Dim B	Height
1	Cover - Standard Cover	Metal	Rectangular	1	22"	17"	
2	Frame	Metal	Round	1			7"
3	Cone	Precast Concrete	Round	1			26"
4	Base	Precast Concrete	Round	1			44"

Primary Comments: ONE ADDITIONAL STEP WEST

Additional Comments:



	PIPE ID
1	282-10 to 282-9
2	282-11 to 282-10
3	282-13 to 282-10



Line/Connection Comments:

282-10 to 282-9

INSPECTED 300' COMPLETE 7/31/18 REBAR EXPOSED IN UPSTREAM END

282-11 to 282-10

Inspected 63.2 feet completed 8/20/18, downstream invert probed evidence of corrosion

282-13 to 282-10

INSPECTED 66.4' COMPLETE 7/31/18



282-10 Facing South



Cover



Frame, North is up



North is up



North is up

CR NHS STORM DRAIN INSPECTIONS

STORM DRAIN STRUCTURE INSPECTION REPORT

Manhole # **282-13**

Date, Inspector(s), & Location

Date of Inspection: Monday, August 20, 2018

Inspector(s): Miller, Stratton

General Location:

Pipe Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

	Diameter	Type	In-Effluent	Rim to Invert	Depth of Flow	Fill Depth	Connection Type	Grade Score
1	24"	RCP	Effluent	64"			Grouted	1
2	12"	CMP	Influent	50"			Grouted	1
3	18"	CMP	Influent	64"			Grouted	1
4	12"	CMP	Influent	62"			Grouted	1

Structure Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

Overall Structural Condition: 1

Steps: 3, Other - Describe in Comments, score 1

Depth of Sump: 9"

Depth of Debris in Sump: 0" to 6"

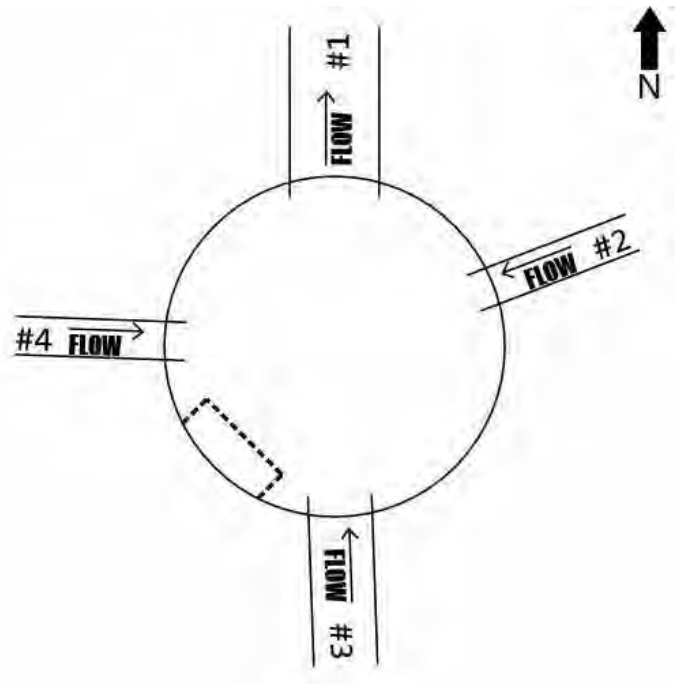
	Component	Material	Geometry	Grade Score	Dim A	Dim B	Height
1	Cover - Standard Cover	Metal	Round	1	25"		
2	Frame	Metal	Round	1			6"
3	Chimney	Precast Concrete	Round	3			4"
4	Reducing Slab	Precast Concrete	Round	1			8"
5	Barrel Section	Precast Concrete	Round	1			13"
6	Base	Precast Concrete	Round	1			42"

Primary Comments: 2 STEPS SW. 1 SE. TOP POLY. REST METAL.

Additional Comments:



	PIPE ID
1	282-13 to 282-10
2	282-14 to 282-13
3	282-13B to 282-13
4	282-32 to 282-13



Line/Connection Comments:

282-13 to 282-10

INSPECTED 66.4' COMPLETE 7/31/18

282-14 to 282-13

INSPECTED COMPLETE 63.4 FEET 8/20/18 Downstream Invert Probed METAL APPEARED SOUND

282-13B to 282-13

Inspected 110.5' Complete 7/31/18 Downstream Invert Probed, METAL APPEARED SOUND

282-32 to 282-13

ABANDONED/GROUTED



282-13 Facing East



Frame, Chimney, and Reducing Slab



Cover



Frame, North is up



North is up



282-13 Interior

CR NHS STORM DRAIN INSPECTIONS

STORM DRAIN STRUCTURE INSPECTION REPORT

Catchbasin Manhole # **282-20**

Date, Inspector(s), & Location

Date of Inspection: Monday, August 20, 2018

Inspector(s): Miller, Stratton

General Location:

Pipe Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

	Diameter	Type	In-Effluent	Rim to Invert	Depth of Flow	Fill Depth	Connection Type	Grade Score
1	18"	CMP	Effluent	58"			Grouted	1
2	12"	CMP	Influent	58"			Grouted	2
3	18"	CMP	Influent	58"			Grouted	3

Structure Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

Overall Structural Condition: 3

Steps: 3, Metal, score 1

Depth of Sump:

Depth of Debris in Sump:

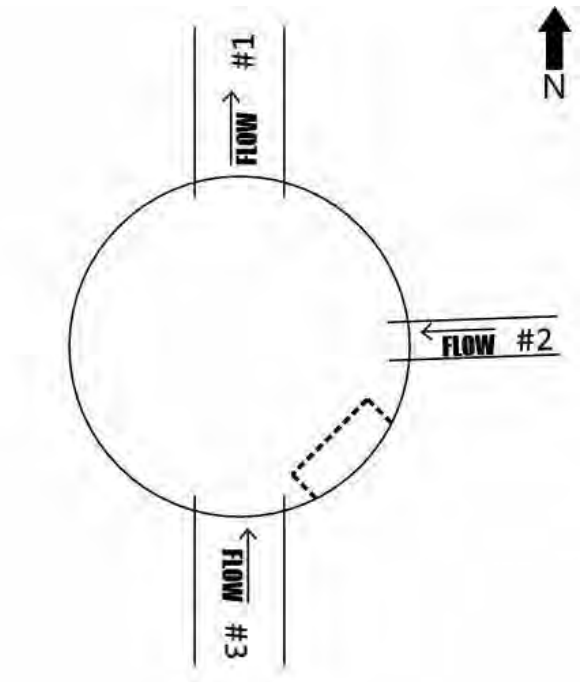
	Component	Material	Geometry	Grade Score	Dim A	Dim B	Height
1	Cover - Standard Cover	Metal	Rectangular	1	22"	18"	
2	Frame	Metal	Rectangular	1			8"
3	Chimney	Precast Concrete	Round	3			2"
4	Cone	Precast Concrete	Eccentric	3			26"
5	Base	Precast Concrete	Round	3			

Primary Comments: CRACK IN BASE AND CONE. BROKEN CHIMNEY BRICKS. Too much debris for ACCURATE SUMP Depth

Additional Comments:



PIPE ID	
1	282-20 to 282-13B
2	282-31 to 282-20
3	282-21 to 282-20



Line/Connection Comments:

282-20 to 282-13B

Inspected both directions 157.6 LF Complete 7/31/18, hole at 20.2' upstream (repaired by DOT O&M Aug 2018) Upstream INVERT PROBED METAL LOSS

282-31 to 282-20

Inspected 62.9 FEET COMPLETE 8/20/18. Downstream invert probed, surface corrosion

282-21 to 282-20

Downstream invert probed, SURFACE CORROSION Inspected 275' COMPLETE 8/20/18



Crack in Base and Cone



282-20 Facing Northeast



Cover



Frame, North is up



North is up



North is up

CR NHS STORM DRAIN INSPECTIONS

STORM DRAIN STRUCTURE INSPECTION REPORT

Catchbasin Manhole # **282-21**

Date, Inspector(s), & Location

Date of Inspection: Monday, August 20, 2018

Inspector(s): Miller, Stratton

General Location:

Pipe Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

	Diameter	Type	In-Effluent	Rim to Invert	Depth of Flow	Fill Depth	Connection Type	Grade Score
1	18"	CMP	Effluent	66"			Grouted	2
2	12"	CMP	Influent	55"			Grouted	2
3	18"	CMP	Influent	66"			Grouted	2

Structure Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

Overall Structural Condition: 2

Steps: 3, Metal, score 1

Depth of Sump:

Depth of Debris in Sump:

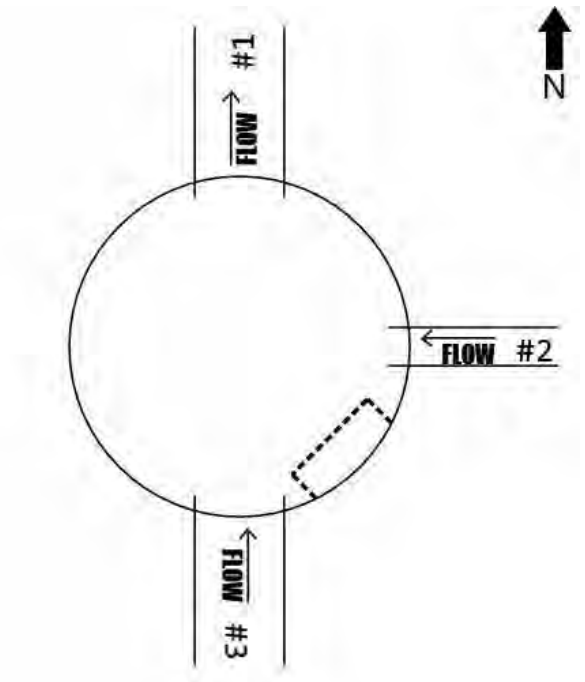
	Component	Material	Geometry	Grade Score	Dim A	Dim B	Height
1	Cover - Standard Cover	Metal	Rectangular	1	22"	18"	
2	Frame	Metal	Rectangular	2			9"
3	Chimney	Precast Concrete	Round	3			3"
4	Cone	Precast Concrete	Eccentric	1			25"
5	Base	Precast Concrete	Round	2			

Primary Comments: Too much debris for ACCURATE SUMP. CRACK IN BASE

Additional Comments:



PIPE ID	
1	282-21 to 282-20
2	282-22 to 282-21
3	282-23 to 282-21



Line/Connection Comments:

282-21 to 282-20

Downstream invert probed, SURFACE CORROSION Inspected 275' COMPLETE 8/20/18

282-22 to 282-21

INSPECTED 64.2 FEET COMPLETED 8/20/18

282-23 to 282-21

Upstream INVERT PROBED METAL APPEARED SOUND INSPECTED 262.5' COMPLETE 8/20/18



282-21 Facing Northwest



Cover



Frame, North is up



South is up



South is up



Frame and Chimney

CR NHS STORM DRAIN INSPECTIONS

STORM DRAIN STRUCTURE INSPECTION REPORT

Catchbasin Manhole # **282-23**

Date, Inspector(s), & Location

Date of Inspection: Monday, August 20, 2018

Inspector(s): Miller, Stratton

General Location:

Pipe Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

	Diameter	Type	In-Effluent	Rim to Invert	Depth of Flow	Fill Depth	Connection Type	Grade Score
1	18"	CMP	Effluent	58"			Grouted	1
2	12"	CMP	Influent	56"			Grouted	1
3	18"	CMP	Influent	58"			Grouted	1

Structure Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

Overall Structural Condition: 2

Steps: 3, Metal, score 1

Depth of Sump:

Depth of Debris in Sump:

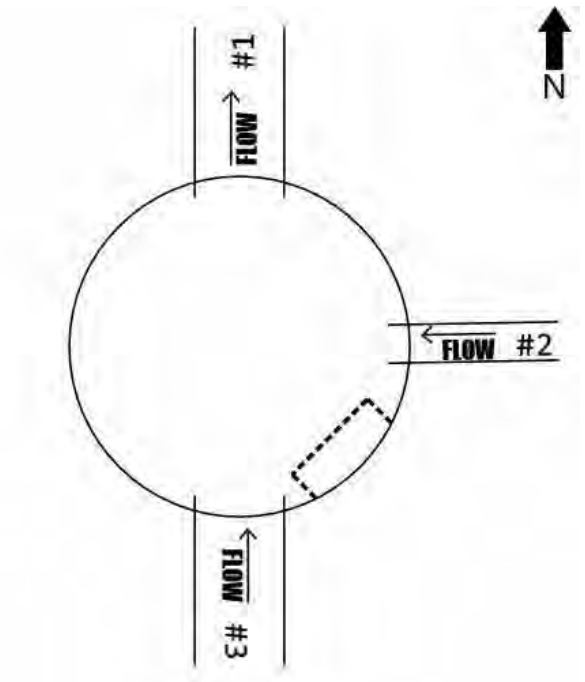
	Component	Material	Geometry	Grade Score	Dim A	Dim B	Height
1	Cover - Standard Cover	Metal	Rectangular	1	22"	18"	
2	Frame	Metal	Rectangular	1			9"
3	Chimney	Precast Concrete	Round	3			4"
4	Cone	Precast Concrete	Eccentric	1			28"
5	Base	Precast Concrete	Round	1			

Primary Comments: TOO MUCH DEBRIS FOR ACCURATE SUMP DEPTH

Additional Comments:



PIPE ID	
1	282-23 to 282-21
2	282-24 to 282-23
3	282-25 to 282-23



Line/Connection Comments:

282-23 to 282-21

Upstream INVERT PROBED METAL APPEARED SOUND INSPECTED 262.5' COMPLETE 8/20/18

282-24 to 282-23

60.2 FEET INSPECTED STOPPED BY DEBRIS 8/20/18 Downstream INVERT PROBED METAL APPEARED SOUND

282-25 to 282-23

Inspected 323.9 FEET COMPLETED 8/20/18 Downstream INVERT PROBED SURFACE CORROSION



282-23 Facing South



Cover



Frame, North is up



Mainline Influent Connection, South is up



East Influent Connection, South is up



Mainline effluent connection, South is up

CR NHS STORM DRAIN INSPECTIONS

STORM DRAIN STRUCTURE INSPECTION REPORT

Catchbasin Manhole # **282-28**

Date, Inspector(s), & Location

Date of Inspection: Friday, July 20, 2018

Inspector(s): Miller

General Location: 2000 MULDOON RD

Pipe Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

	Diameter	Type	In-Effluent	Rim to Invert	Depth of Flow	Fill Depth	Connection Type	Grade Score
1	18"	CMP	Effluent	63"			Grouted	1
2	18"	CMP	Influent	63"			Grouted	1

Structure Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

Overall Structural Condition: 1

Steps: 3, Metal, score 1

Depth of Sump: 9"

Depth of Debris in Sump: 0" to 6"

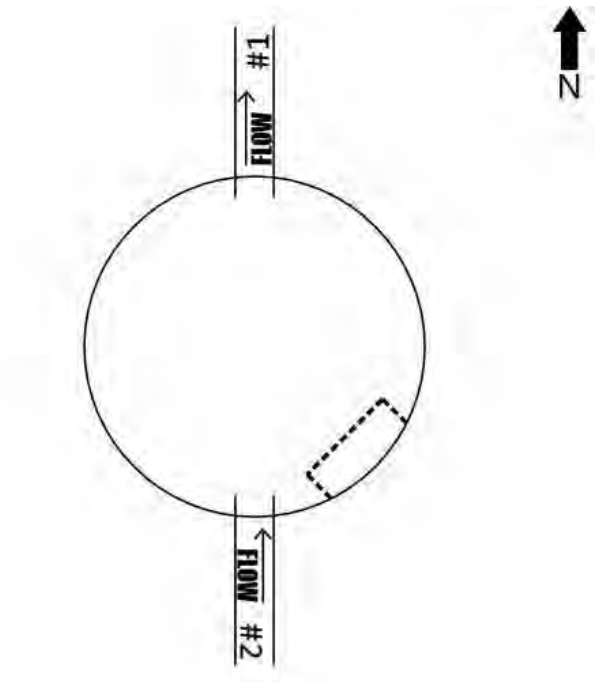
	Component	Material	Geometry	Grade Score	Dim A	Dim B	Height
1	Cover - Standard Cover	Metal	Rectangular	1	22"	18"	
2	Frame	Metal	Rectangular	1			7"
3	Chimney	Precast Concrete	Round	1			5"
4	Cone	Precast Concrete	Round	1			26"
5	Base	Precast Concrete	Round	1			33"

Primary Comments: TOO MUCH DEBRIS FOR ACCURATE BASE/SUMP

Additional Comments: INVERTS APPEARED SOUND



	PIPE ID
1	282-28 to 282-25
2	282-29 to 282-28



Line/Connection Comments:

282-28 to 282-25

278.9' INSPECTED COMPLETE 7/20/18

282-29 to 282-28

292.1' INSPECTED COMPLETE 7/20/18



282-28, Facing North



Cover



Frame, North is up



North is up



Influent mainline connection



Effluent mainline connection

CR NHS STORM DRAIN INSPECTIONS

STORM DRAIN STRUCTURE INSPECTION REPORT

Catchbasin Manhole # 3-52

Date, Inspector(s), & Location

Date of Inspection: Friday, July 20, 2018

Inspector(s): Miller

General Location: 7831 WILDBROOK CT

Pipe Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

	Diameter	Type	In-Effluent	Rim to Invert	Depth of Flow	Fill Depth	Connection Type	Grade Score
1	18"	DIP	Influent	55"			Grouted	1
2	12"	CMP	Influent	44"			Grouted	1
3	24"	RCP	Effluent	55"			Grouted	2

Structure Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

Overall Structural Condition: 2

Steps: 2, Metal, score 1

Depth of Sump: 7"

Depth of Debris in Sump: 0" to 6"

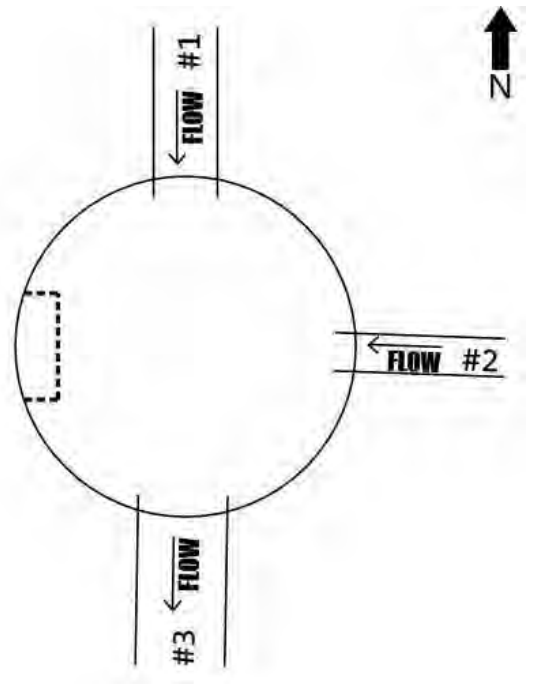
	Component	Material	Geometry	Grade Score	Dim A	Dim B	Height
1	Cover - Standard Cover	Metal	Rectangular	1	22"	18"	
2	Frame	Metal	Rectangular	1			7"
3	Chimney	Precast Concrete	Round	2			4"
4	Reducing Slab	Precast Concrete	Round	1			8"
5	Base	Precast Concrete	Round	3			45"

Primary Comments: BRICKS BETWEEN FRAME AND CHIMNEY BROKEN/MISSING, CIRCUMFERENTIAL CRACK IN BASE

Additional Comments:



	PIPE ID
1	3-55 to 3-52
2	3-53 to 3-52
3	3-52 to 3-50



Line/Connection Comments:

3-55 to 3-52

INSPECTED 256' COMPLETE 7/20/18

3-52 to 3-50

225.2' INSPECTED COMPLETE 7/20/18



3-52 Facing South



Cover



North is up



North is up



North is up



Crack in base, North is up



Frame and Chimney

CR NHS STORM DRAIN INSPECTIONS

STORM DRAIN STRUCTURE INSPECTION REPORT

Manhole # 3-50

Date, Inspector(s), & Location

Date of Inspection: Monday, July 23, 2018

Inspector(s): Miller

General Location: 7830 WILDBROOK CT

Pipe Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

	Diameter	Type	In-Effluent	Rim to Invert	Depth of Flow	Fill Depth	Connection Type	Grade Score
1	24"	RCP	Influent	56"			Grouted	2
2	12"	CMP	Influent	46"			Grouted	2
3	24"	RCP	Effluent	56"			Grouted	1
4	12"	CMP	Influent	50"			Grouted	3

Structure Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

Overall Structural Condition: 3

Steps: 1, Metal, score 1

Depth of Sump: 9"

Depth of Debris in Sump: 0" to 6"

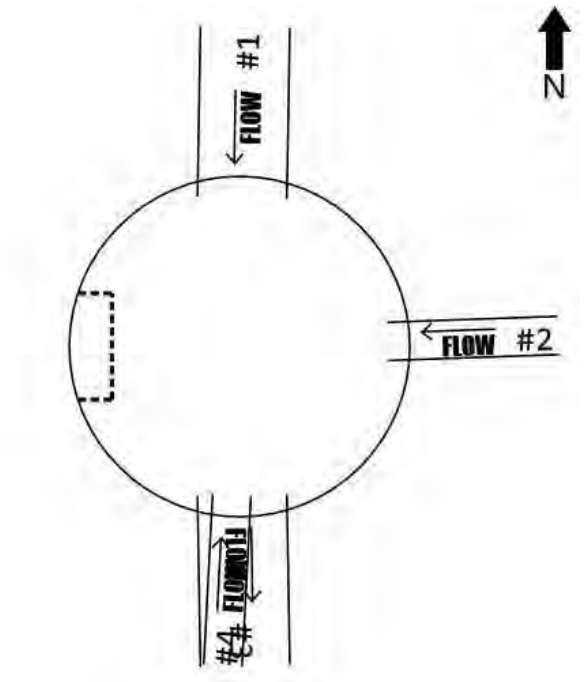
	Component	Material	Geometry	Grade Score	Dim A	Dim B	Height
1	Cover - Standard Cover	Metal	Round	1	25"		
2	Frame	Metal	Round	1			6"
3	Chimney	Precast Concrete	Round	2			7"
4	Reducing Slab	Precast Concrete	Round	1			8"
5	Base	Precast Concrete	Round	3			

Primary Comments: Circumferential CRACK IN BASE

Additional Comments: 2" bricks broken, 5" chimney below



PIPE ID	
1	3-52 to 3-50
2	3-51 to 3-50
3	3-50 to 3-47
4	3-49 to 3-50



Line/Connection Comments:

3-52 to 3-50

225.2' INSPECTED COMPLETE 7/20/18

3-51 to 3-50

63.6' INSPECTED COMPLETE 7/23/18

3-50 to 3-47

222.7' INSPECTED COMPLETE 7/20/18

3-49 to 3-50

59.6' INSPECTED COMPLETE 7/23/18



3-50 Facing North



South effluent mainline connection



Cover



Frame, north is up



Chimney, Frame, Reducing Slab



Influent mainline connection



East influent pipe connection



South influent pipe connection

CR NHS STORM DRAIN INSPECTIONS

STORM DRAIN STRUCTURE INSPECTION REPORT

Catchbasin Manhole # 3-47

Date, Inspector(s), & Location

Date of Inspection: Monday, July 23, 2018

Inspector(s): Miller

General Location: 7842 EASTBROOK DR

Pipe Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

	Diameter	Type	In-Effluent	Rim to Invert	Depth of Flow	Fill Depth	Connection Type	Grade Score
1	12"	CMP	Influent	48"			Grouted	2
2	24"	RCP	Effluent	59"			Grouted	2
3	24"	RCP	Influent	59"			Grouted	2

Structure Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

Overall Structural Condition: 3

Steps: 1, Metal, score 1

Depth of Sump: 9"

Depth of Debris in Sump: 0" to 6"

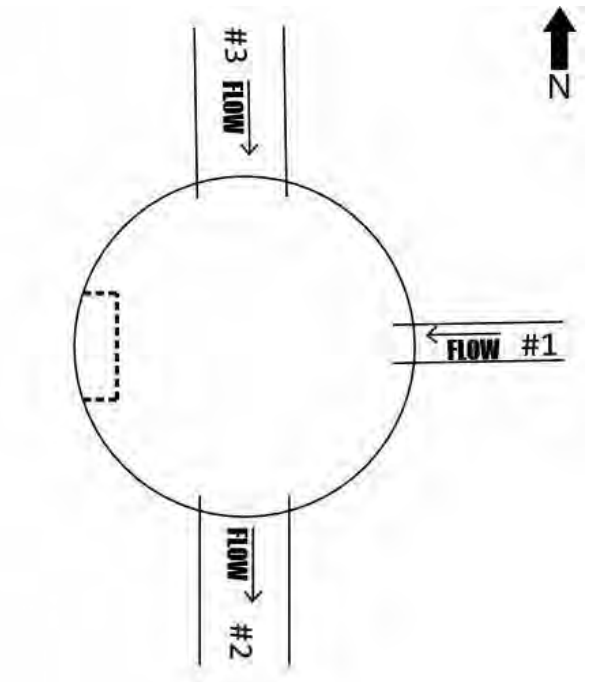
	Component	Material	Geometry	Grade Score	Dim A	Dim B	Height
1	Cover - Standard Cover	Metal	Rectangular	1	22"	18"	
2	Frame	Metal	Rectangular	1			7"
3	Chimney	Precast Concrete	Round	3			6"
4	Reducing Slab	Precast Concrete	Round	1			8"
5	Base	Precast Concrete	Round	4			45"

Primary Comments:

Additional Comments:



	PIPE ID
1	3-48 to 3-47
2	3-47 to 3-45
3	3-50 to 3-47



Line/Connection Comments:

3-48 to 3-47

60.5' INSPECTED COMPLETE 7/26/18

3-47 to 3-45

257.7' INSPECTED COMPLETE 7/20/18

3-50 to 3-47

222.7' INSPECTED COMPLETE 7/20/18



3-47 Facing North



Cover



Frame, North is up



Chimney and Reducing Slab



Chimney and Reducing Slab



North is up



Influent mainline connection



Crack in base

CR NHS STORM DRAIN INSPECTIONS

STORM DRAIN STRUCTURE INSPECTION REPORT

Catchbasin Manhole # 3-45

Date, Inspector(s), & Location

Date of Inspection: Monday, July 23, 2018

Inspector(s): Miller

General Location: 2413 HILLBROOK CIR

Pipe Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

	Diameter	Type	In-Effluent	Rim to Invert	Depth of Flow	Fill Depth	Connection Type	Grade Score
1	24"	RCP	Influent	60"			Grouted	2
2	12"	CMP	Influent	58"			Grouted	2
3	24"	RCP	Effluent	60"			Grouted	2

Structure Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

Overall Structural Condition: 1

Steps: 1, Metal, score 1

Depth of Sump: 6"

Depth of Debris in Sump: 0" to 6"

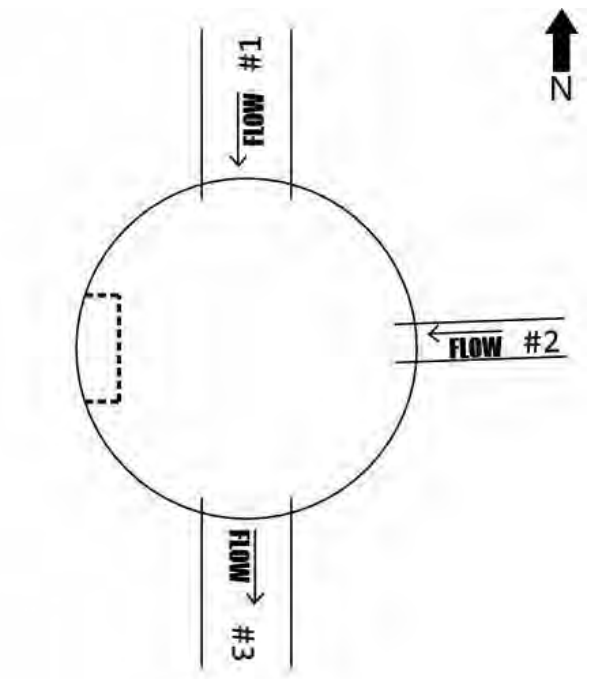
	Component	Material	Geometry	Grade Score	Dim A	Dim B	Height
1	Cover - Standard Cover	Metal	Rectangular	1	22"	18"	
2	Frame	Metal	Rectangular	1			7"
3	Chimney	Precast Concrete	Round	2			8"
4	Reducing Slab	Precast Concrete	Round	1			8"
5	Base	Precast Concrete	Round	1			48"

Primary Comments: 2 GRADE RINGS 2" 6"

Additional Comments:



PIPE ID	
1	3-47 to 3-45
2	3-46 to 3-45
3	3-45 to 3-28



Line/Connection Comments:

3-47 to 3-45

257.7' INSPECTED COMPLETE 7/20/18

3-46 to 3-45

62.1' INSPECTED COMPLETE 7/23/18

3-45 to 3-28

256.5' INSPECTED COMPLETE 7/20/18 no grout downstream end



CR NHS STORM DRAIN INSPECTIONS

STORM DRAIN STRUCTURE INSPECTION REPORT

Catchbasin Manhole # 3-28

Date, Inspector(s), & Location

Date of Inspection: Friday, July 20, 2018

Inspector(s): Miller

General Location:

Pipe Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

	Diameter	Type	In-Effluent	Rim to Invert	Depth of Flow	Fill Depth	Connection Type	Grade Score
1	24"	RCP	Influent	59"			Grouted	5
2	36"	RCP	Effluent				Grouted	2
3	30"	CMP	Influent				Grouted	2

Structure Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

Overall Structural Condition: 3

Steps: 3, Metal, score 1

Depth of Sump: 8"

Depth of Debris in Sump: 0" to 6"

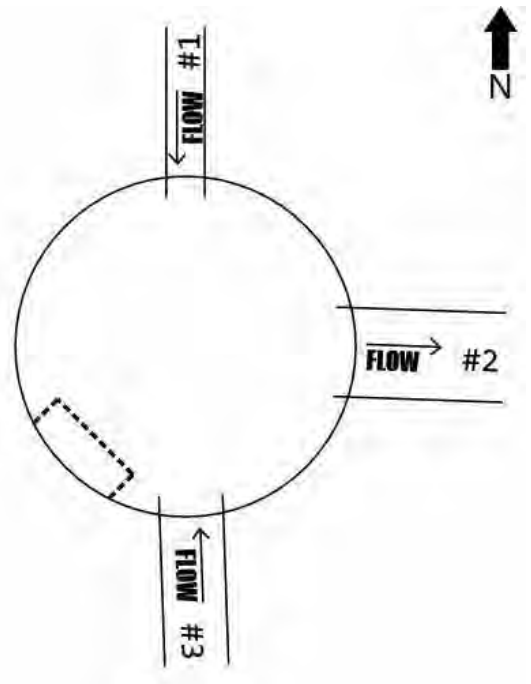
	Component	Material	Geometry	Grade Score	Dim A	Dim B	Height
1	Cover - Standard Cover	Metal	Rectangular	1	22"	18"	
2	Frame	Metal	Rectangular	1			7"
3	Chimney	Precast Concrete	Round	1			6"
4	Reducing Slab	Precast Concrete	Round	1			8"
5	Base	Precast Concrete	Round	4			42"

Primary Comments: Steps unusable, bricks BETWEEN FRAME AND CHIMNEY BROKEN

Additional Comments: Crack in base



PIPE ID	
1	3-45 to 3-28
2	3-28 to 3-27
3	3-29 to 3-28



Line/Connection Comments:

3-45 to 3-28

256.5' INSPECTED COMPLETE 7/20/18 no grout downstream end

3-28 to 3-27

13.1' Inspected, Incomplete due to debris 7/20/18

3-29 to 3-28

105.9' inspected COMPLETE 7/20/18



3-28 Facing North



Cover



Frame, North is up



Chimney, Frame, and reducing slab. Missing grout on north influent pipe connection

CR NHS STORM DRAIN INSPECTIONS

STORM DRAIN STRUCTURE INSPECTION REPORT

Catchbasin Manhole # 3-29

Date, Inspector(s), & Location

Date of Inspection: Monday, July 23, 2018

Inspector(s): Miller

General Location: 2420 MULDOON RD

Pipe Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

	Diameter	Type	In-Effluent	Rim to Invert	Depth of Flow	Fill Depth	Connection Type	Grade Score
1	18"	CMP	Influent	55"			Grouted	3
2	30"	CMP	Influent	55"			Grouted	3
3	30"	CMP	Effluent	54"			Grouted	3

Structure Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

Overall Structural Condition: 3

Steps: 4, Metal, score 1

Depth of Sump: 12"

Depth of Debris in Sump: 0" to 6"

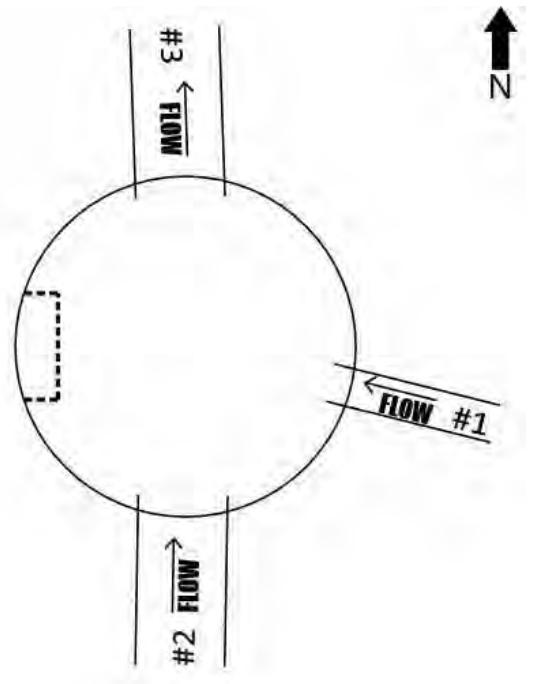
	Component	Material	Geometry	Grade Score	Dim A	Dim B	Height
1	Cover - Standard Cover	Metal	Rectangular	1	36"	18"	
2	Frame	Metal	Rectangular	1			10"
3	Chimney	Precast Concrete	Round	4			5"
4	Reducing Slab	Precast Concrete	Round	1			8"
5	Base	Precast Concrete	Round	2			48"

Primary Comments: BRICK CHIMNEY BROKEN

Additional Comments: INVERTS SOFT



	PIPE ID
1	3-44 to 3-29
2	3-30 to 3-29
3	3-29 to 3-28



Line/Connection Comments:

3-44 to 3-29

67' INSPECTED COMPLETE 7/23/18

3-30 to 3-29

208.2' INSPECTED COMPLETE 7/20/18 HOLE IN BOTTOM OF UPSTREAM INVERT

3-29 to 3-28

105.9' inspected COMPLETE 7/20/18



3-29 Facing North



Cover



Frame, North is up



3-29 East is up

CR NHS STORM DRAIN INSPECTIONS

STORM DRAIN STRUCTURE INSPECTION REPORT

Manhole # **3-30**

Date, Inspector(s), & Location

Date of Inspection: Monday, July 23, 2018

Inspector(s): Miller

General Location: 7731 E NORTHERN LIGHTS BLVD

Pipe Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

	Diameter	Type	In-Effluent	Rim to Invert	Depth of Flow	Fill Depth	Connection Type	Grade Score
1	30"	CMP	Effluent				Grouted	2
2	12"	CMP	Influent				Grouted	2
3	24"	CMP	Influent				Grouted	3

Structure Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

Overall Structural Condition: 3

Steps: 4, Metal, score 1

Depth of Sump: 10"

Depth of Debris in Sump: 0" to 6"

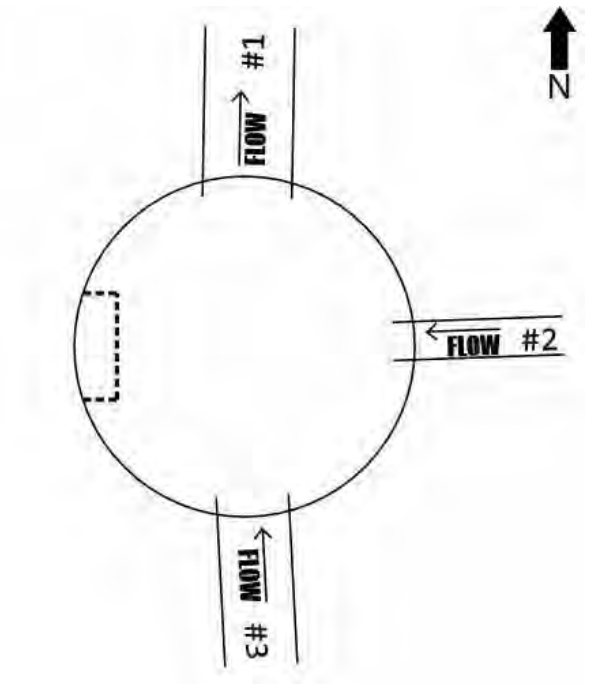
	Component	Material	Geometry	Grade Score	Dim A	Dim B	Height
1	Cover - Standard Cover	Metal	Round	2	25"		
2	Frame	Metal	Round	1			6"
3	Chimney	Precast Concrete	Round	1			6"
4	Cone	Precast Concrete	Eccentric	1			36"
5	Base	Precast Concrete	Round	3			42"

Primary Comments: CIRCUMFERENTIAL CRACK IN BASE

Additional Comments: METAL LOSS IN INVERTS



PIPE ID	
1	3-30 to 3-29
2	3-31 to 3-30
3	3-32 to 3-30



Line/Connection Comments:

3-30 to 3-29

208.2' INSPECTED COMPLETE 7/20/18 HOLE IN BOTTOM OF UPSTREAM INVERT

3-31 to 3-30

63.8' INSPECTED COMPLETE 7/23/18

3-32 to 3-30

31' INSPECTED COMPLETE 7/20/18



3-30 Facing North



Cover



Frame



Mainline effluent connection



Mainline influent connection



East influent connection

CR NHS STORM DRAIN INSPECTIONS

STORM DRAIN STRUCTURE INSPECTION REPORT

Catchbasin Manhole # 3-32

Date, Inspector(s), & Location

Date of Inspection: Friday, July 20, 2018

Inspector(s): Miller

General Location: 7731 E NORTHERN LIGHTS BLVD

Pipe Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

	Diameter	Type	In-Effluent	Rim to Invert	Depth of Flow	Fill Depth	Connection Type	Grade Score
1	24"	CMP	Influent	66"			Grouted	3
2	24"	CMP	Effluent	66"			Grouted	3

Structure Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

Overall Structural Condition: 3

Steps: 5, Metal, score 1

Depth of Sump: 5"

Depth of Debris in Sump: 0" to 6"

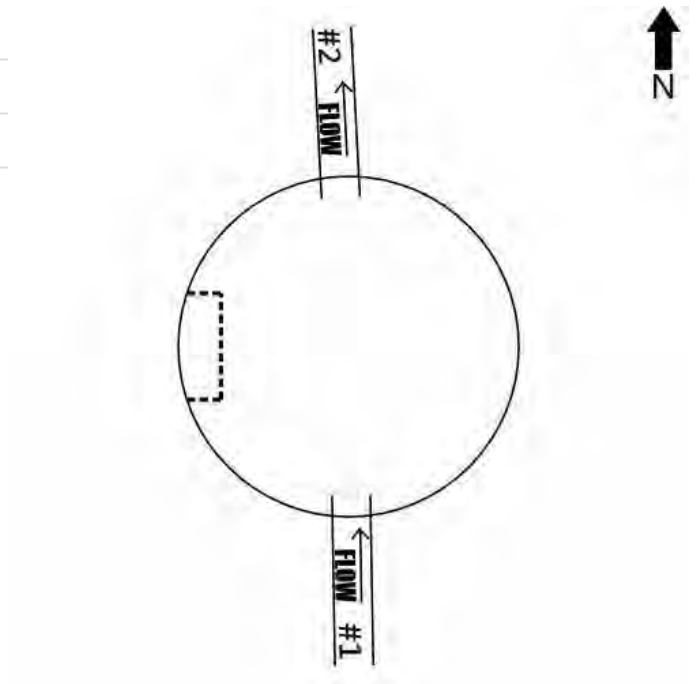
	Component	Material	Geometry	Grade Score	Dim A	Dim B	Height
1	Cover - Standard Cover	Metal	Rectangular	1	36"	18"	
2	Frame	Metal	Rectangular	3			9"
3	Chimney	Precast Concrete	Round	4			3"
4	Reducing Slab	Precast Concrete	Round	1			8"
5	Base	Precast Concrete	Round	3			60"

Primary Comments: CURB INLET BROKEN, CHIMNEY BROKEN/MISSING

Additional Comments: CIRCUMFERENTIAL CRACK IN BASE, INVERTS PROBED METAL APPEARED SOUND



	PIPE ID
1	3-33 to 3-32
2	3-32 to 3-30



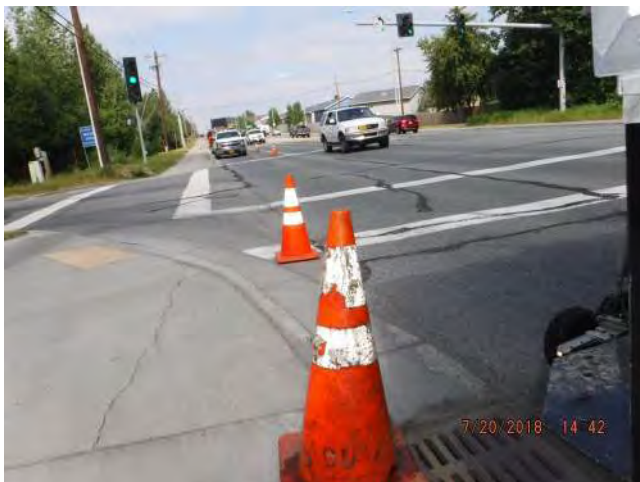
Line/Connection Comments:

3-33 to 3-32

327' INSPECTED COMPLETE 7/20/18

3-32 to 3-30

31' INSPECTED COMPLETE 7/20/18



3-32 Facing North



Effluent pipe connection



Cover



Broken curb inlet



Frame, Facing East



Influent pipe connection

CR NHS STORM DRAIN INSPECTIONS

STORM DRAIN STRUCTURE INSPECTION REPORT

Manhole # **3-33**

Date, Inspector(s), & Location

Date of Inspection: Monday, July 23, 2018

Inspector(s): Miller

General Location: 7731 E NORTHERN LIGHTS BLVD

Pipe Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

	Diameter	Type	In-Effluent	Rim to Invert	Depth of Flow	Fill Depth	Connection Type	Grade Score
1	12"	CMP	Influent	57"	0"	2"	Grouted	1
2	24"	CMP	Influent	68"	0"	0"	Grouted	1
3	18"	CMP	Influent	58"	0"	0"	Grouted	5
4	24"	CMP	Effluent	68"	0"	0"	Grouted	1

Structure Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

Overall Structural Condition: 1

Steps: 3, Metal, score 1

Depth of Sump: 7"

Depth of Debris in Sump: 0" to 6"

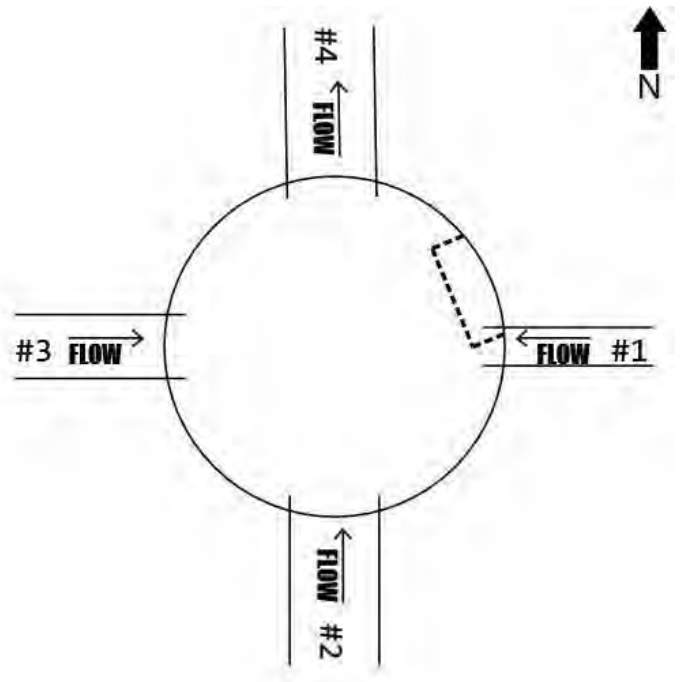
	Component	Material	Geometry	Grade Score	Dim A	Dim B	Height
1	Cover - Standard Cover	Metal	Round	1	25"		
2	Frame	Metal	Round	1			7"
3	Chimney	Precast Concrete	Round	2			2"
4	Cone	Precast Concrete	Eccentric	1			27"
5	Base	Precast Concrete	Round	1			43"

Primary Comments:

Additional Comments:



	PIPE ID
1	3-43 to 3-33
2	3-34 to 3-33
3	3-33A to 3-33
4	3-33 to 3-32



Line/Connection Comments:

3-43 to 3-33

63.5' INSPECTED COMPLETE 7/23/18

3-34 to 3-33

345.8' INSPECTED COMPLETE 7/23/18

3-33A to 3-33

DS GROUT MISSING

3-33 to 3-32

327' INSPECTED COMPLETE 7/20/18



3-33 Facing South



Frame, North is up



North is up



Pipe connections, North is up



Mainline Influent connection, North is up



3-33A to 3-33

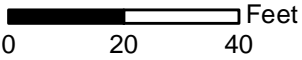
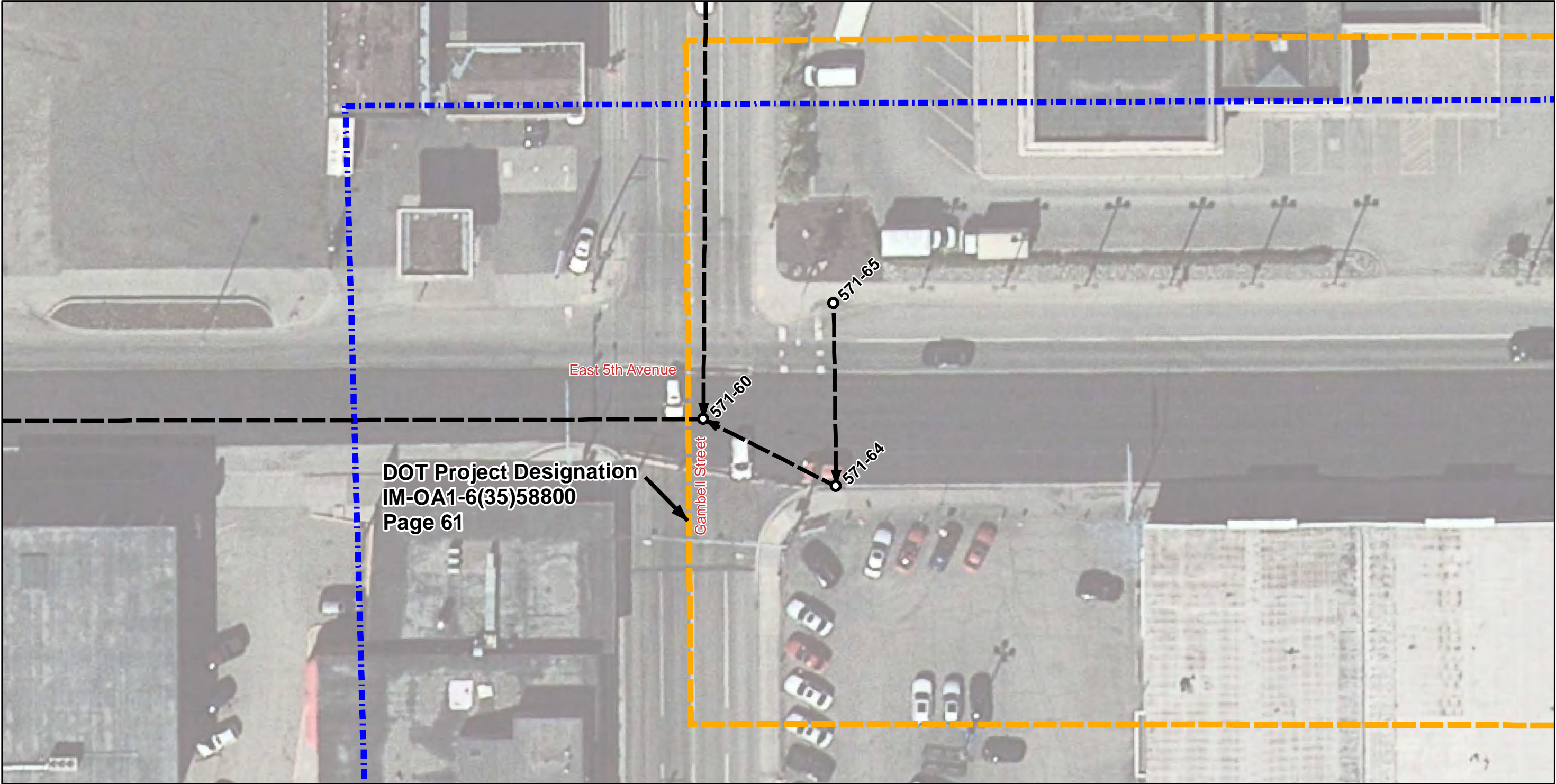


Cover

**Downtown: 5th and 6th Ave. from
Gambell St. to Orca St.,
Ingra St. from 6th Ave. to 8th Ave.**

Storm Drain System Maps

East 5th Avenue: Gambell Street to Orca Street



Legend

Manhole/Catchbasin

- Not Inspected
- Inspected

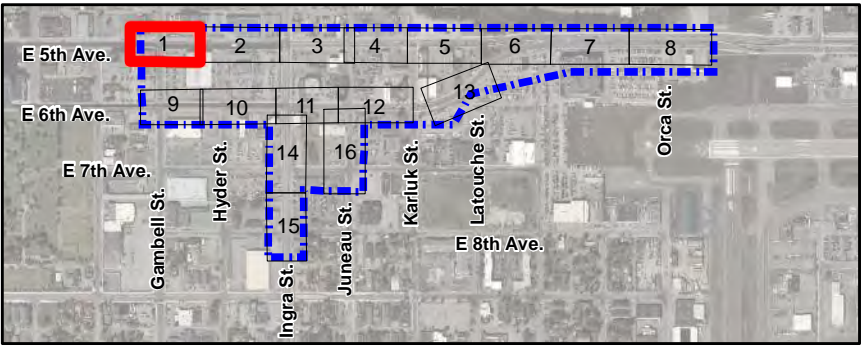
Pipe Segment

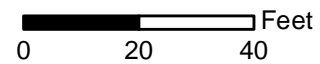
- Inspected
- Not Inspected

Score

- 0 - No Defect
- 1 - Minor Defect
- 2 - Minor to Moderate Defect
- 3 - Moderate Defect
- 4 - Significant Defect
- 5 - Most Significant Defect
- N - Not Scored

- Project Area
- Asbuilt Designation





0 - No Defect
1 - Minor Defect
2 - Minor to Moderate Defect
3 - Moderate Defect
4 - Significant Defect
5 - Most Significant Defect
N - Not Scored



---▶ Not Inspected



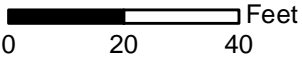
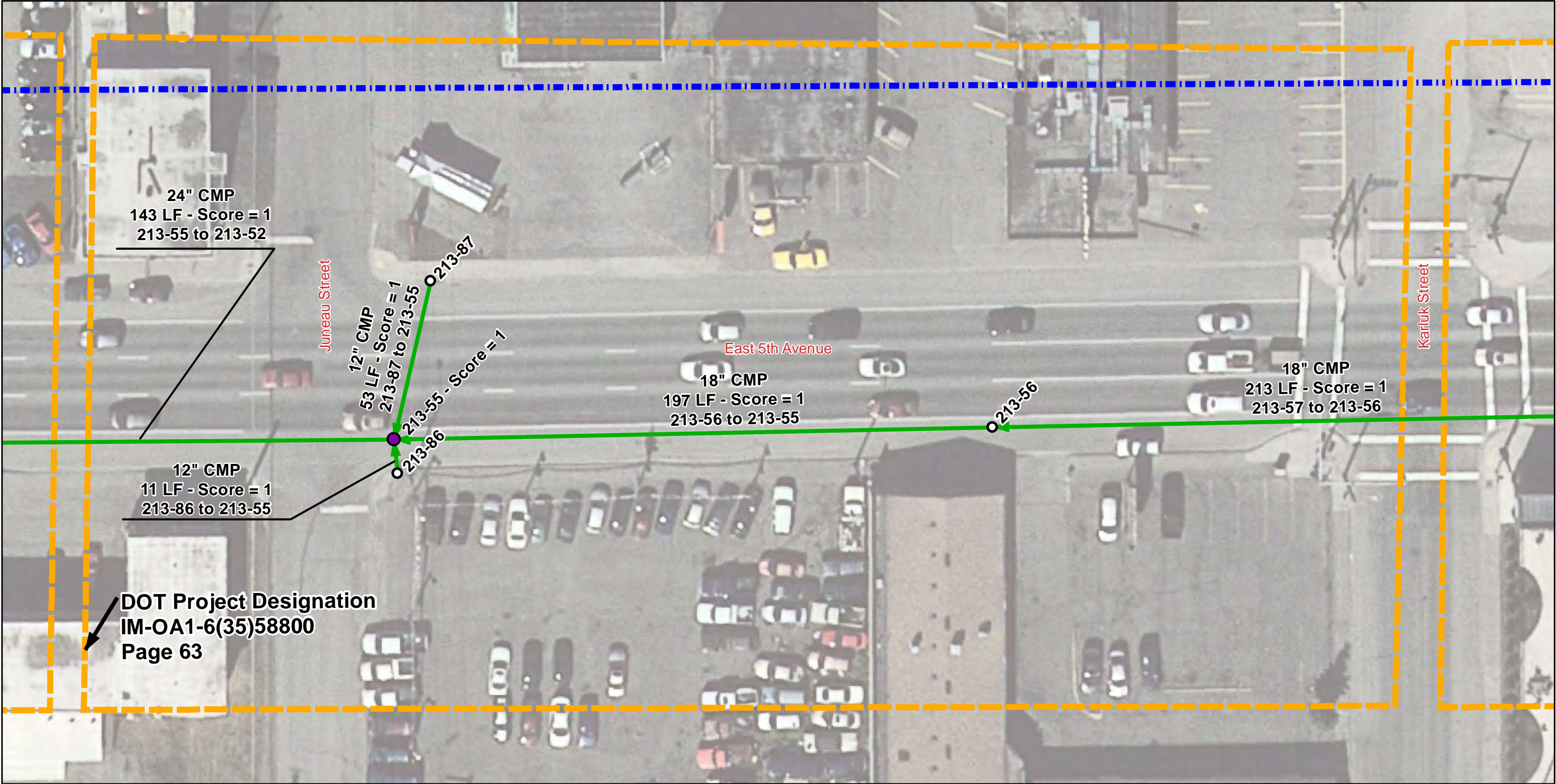
Project Area

Asbuilt Designation

- Not Inspected
- Inspected

 Inspected
 Not Inspected

East 5th Avenue: Gambell Street to Orca Street



Legend

- Project Area
- Asbuilt Designation

Manhole/Catchbasin

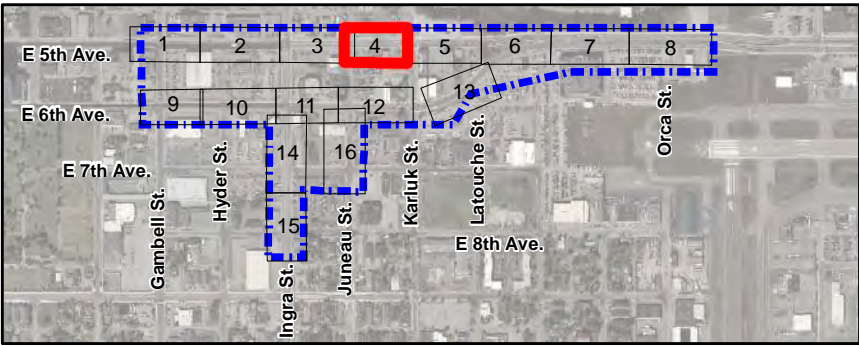
- Not Inspected
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Pipe Segment

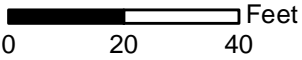
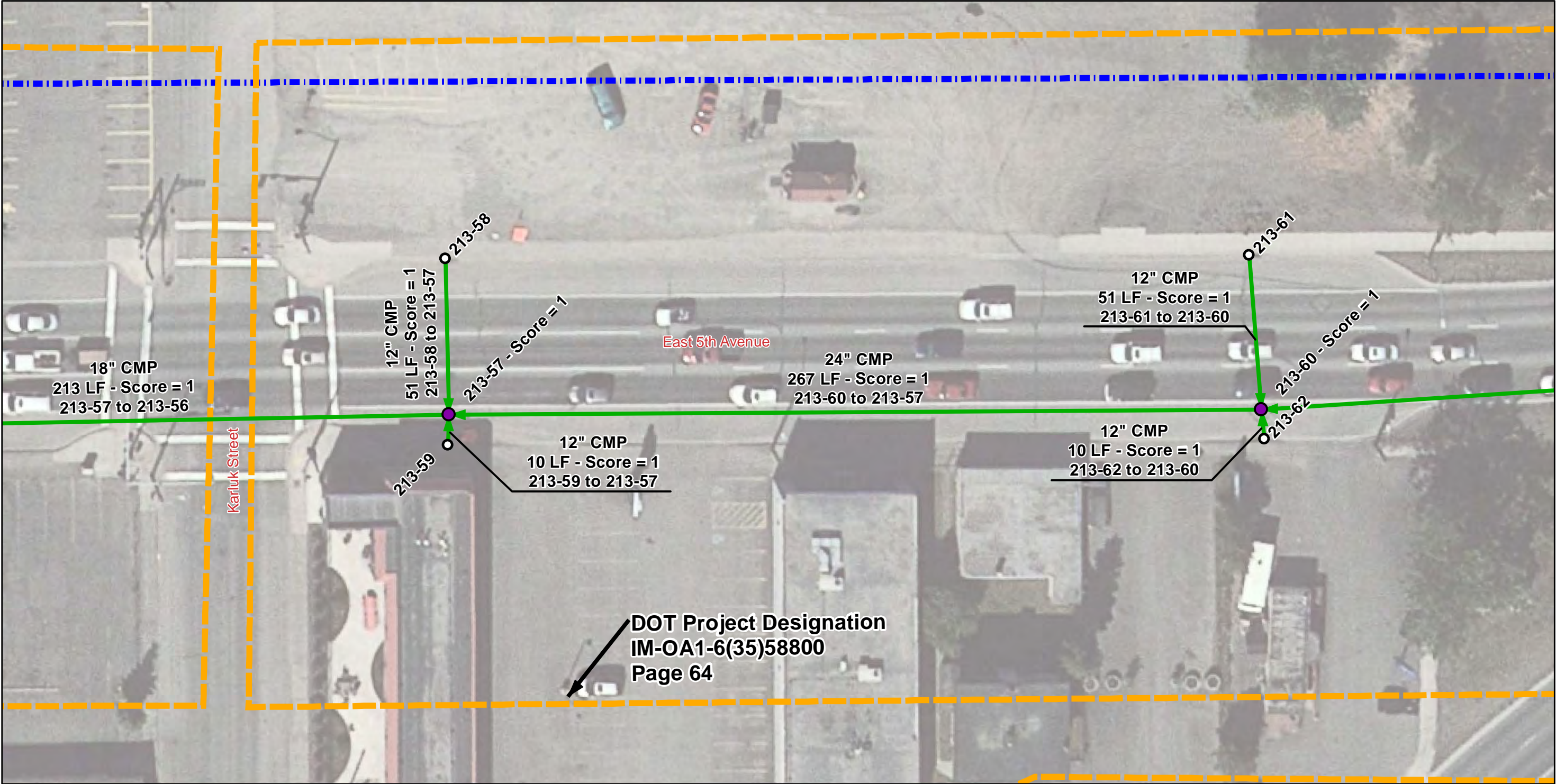
- Inspected
- Not Inspected

Score

- 0 - No Defect
- 1 - Minor Defect
- 2 - Minor to Moderate Defect
- 3 - Moderate Defect
- 4 - Significant Defect
- 5 - Most Significant Defect
- N - Not Scored



East 5th Avenue: Gambell Street to Orca Street



Legend



Project Area
Asbuilt Designation

Manhole/Catchbasin

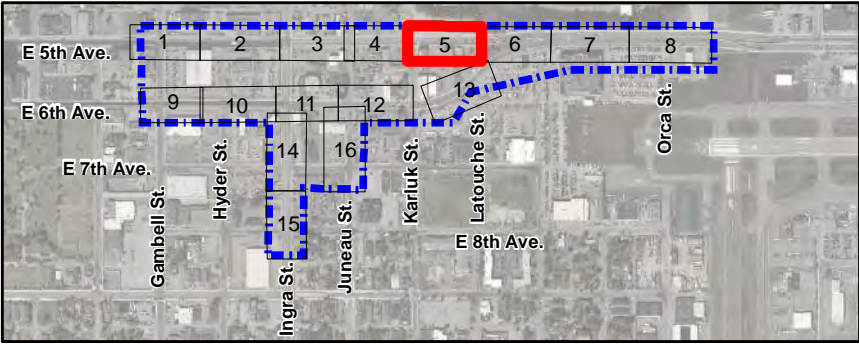
- Not Inspected
- Inspected

Pipe Segment

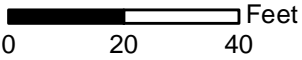
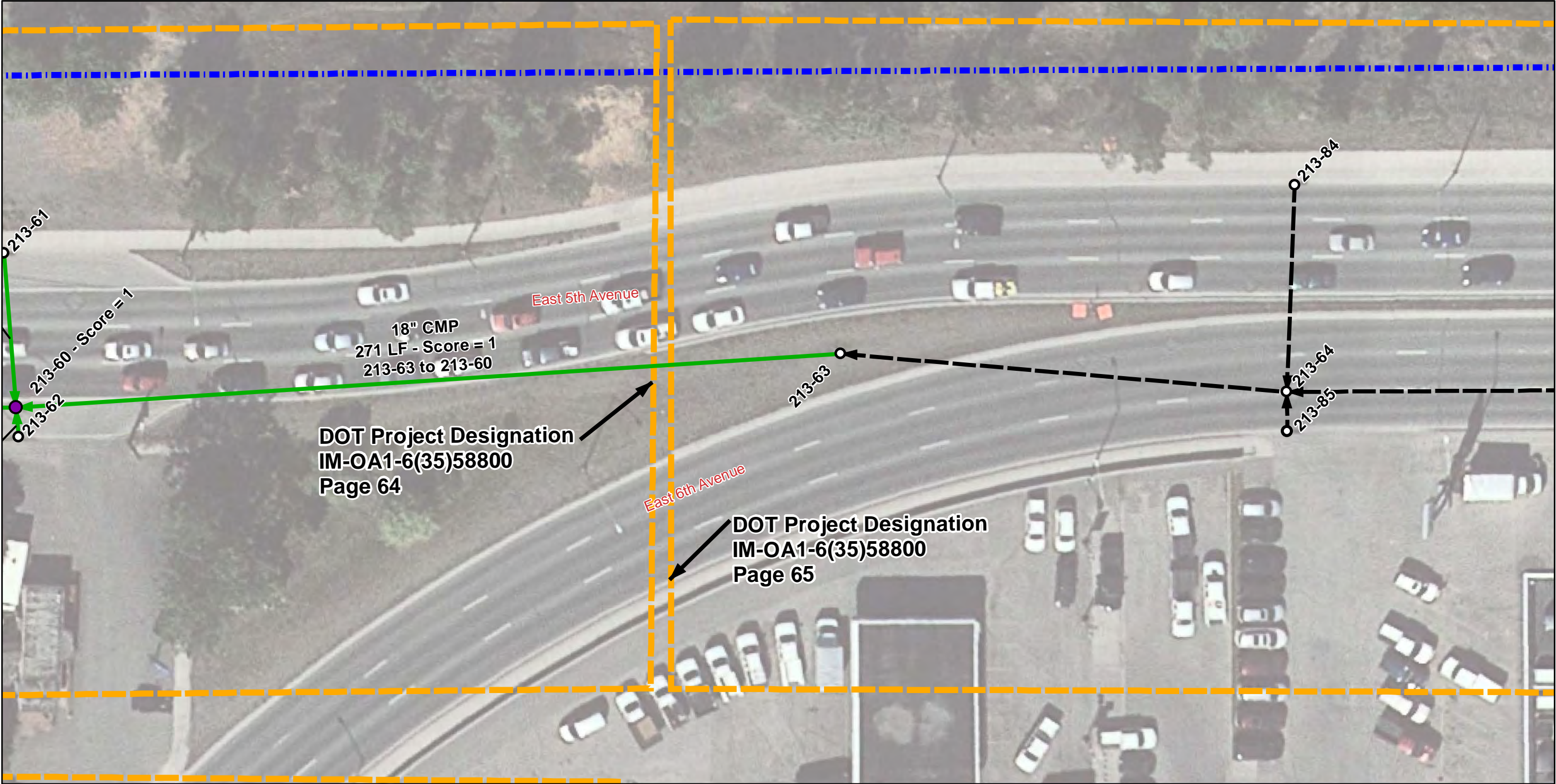
- Inspected
- Not Inspected

Score

- 0 - No Defect
- 1 - Minor Defect
- 2 - Minor to Moderate Defect
- 3 - Moderate Defect
- 4 - Significant Defect
- 5 - Most Significant Defect
- N - Not Scored



East 5th Avenue: Gambell Street to Orca Street

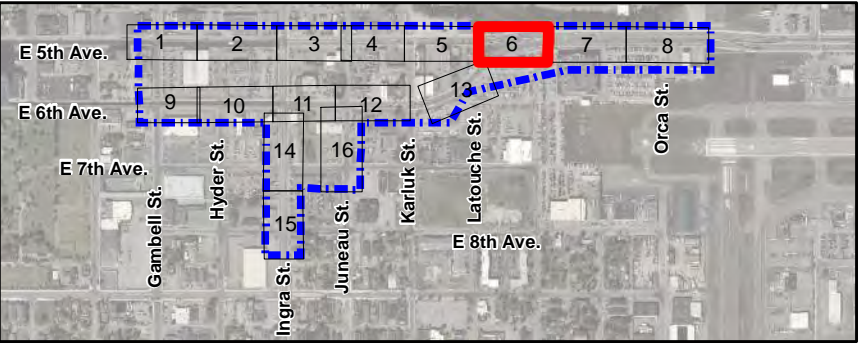


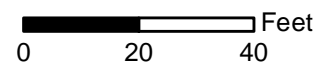
Legend

- Project Area
- Asbuilt Designation

- | Manhole/Catchbasin | Pipe Segment |
|--------------------|---------------|
| Not Inspected | Inspected |
| Inspected | Not Inspected |

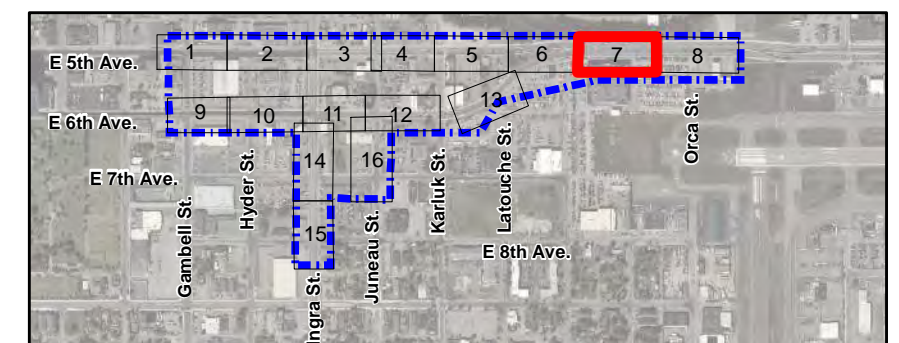
- Score**
- 0 - No Defect
 - 1 - Minor Defect
 - 2 - Minor to Moderate Defect
 - 3 - Moderate Defect
 - 4 - Significant Defect
 - 5 - Most Significant Defect
 - N - Not Scored



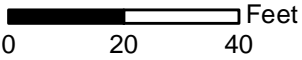
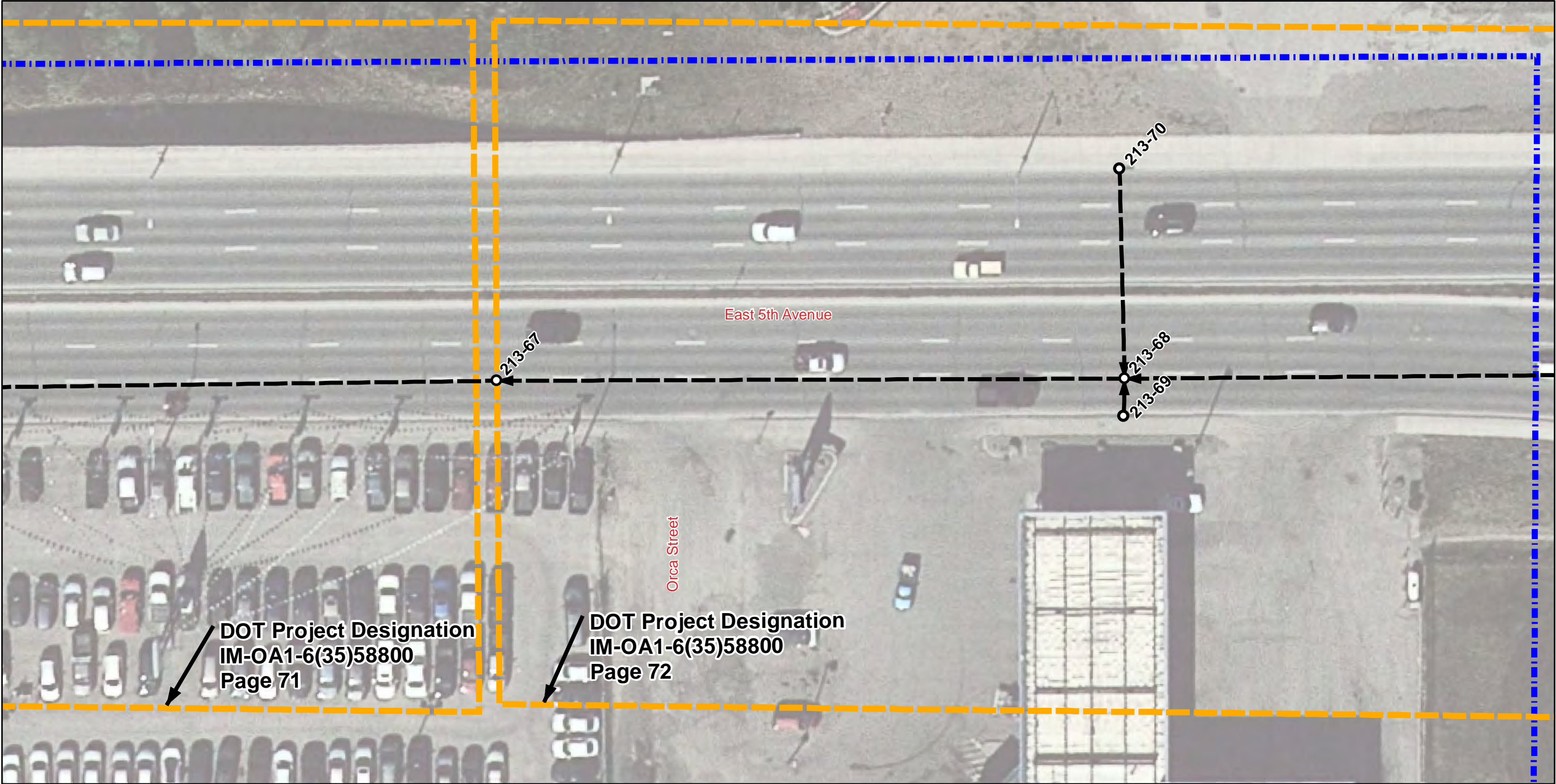


Score

- 0 - No Defect
1 - Minor Defect
2 - Minor to Moderate Defect
3 - Moderate Defect
4 - Significant Defect
5 - Most Significant Defect
N - Not Scored



East 5th Avenue: Gambell Street to Orca Street



Legend

Manhole/Catchbasin

- Not Inspected
- Inspected

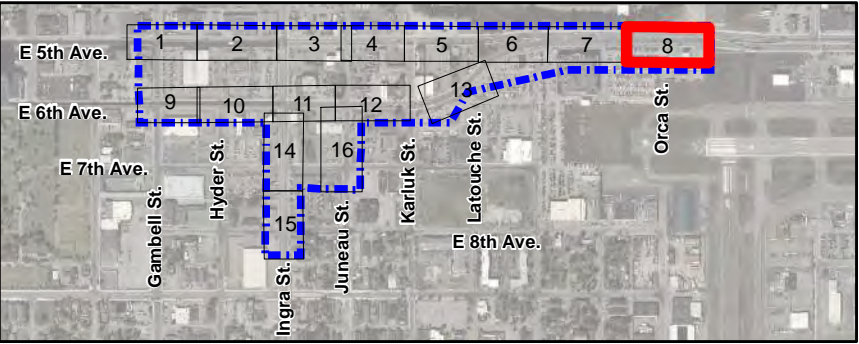
Pipe Segment

- Inspected
- Not Inspected

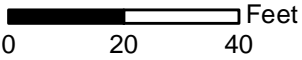
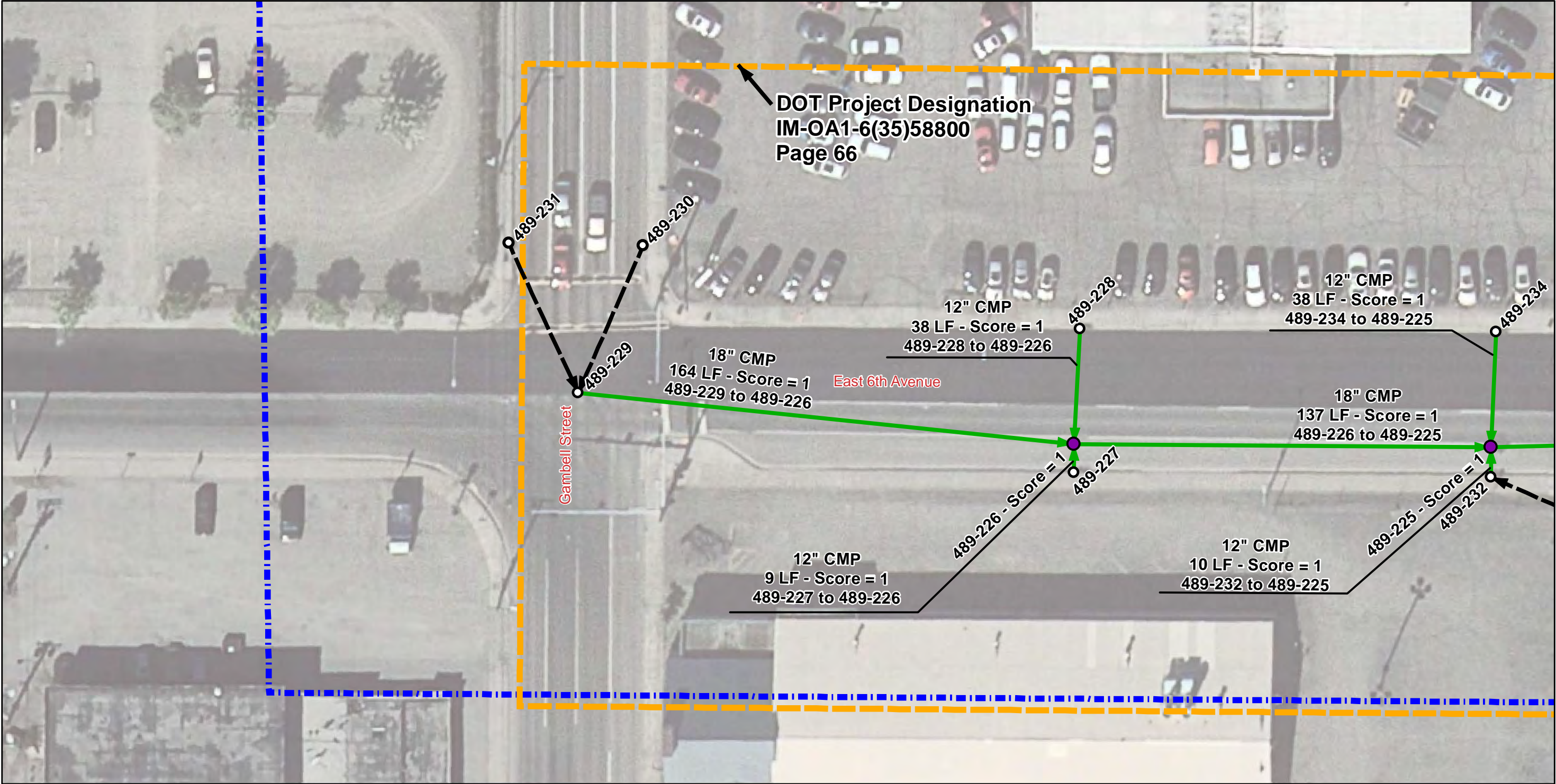
Score

- 0 - No Defect
- 1 - Minor Defect
- 2 - Minor to Moderate Defect
- 3 - Moderate Defect
- 4 - Significant Defect
- 5 - Most Significant Defect
- N - Not Scored

- Project Area
- Asbuilt Designation



East 6th Avenue: Gambell Street to Latouche Street



Legend

Manhole/ Catchbasin

- Not Inspected
- Inspected

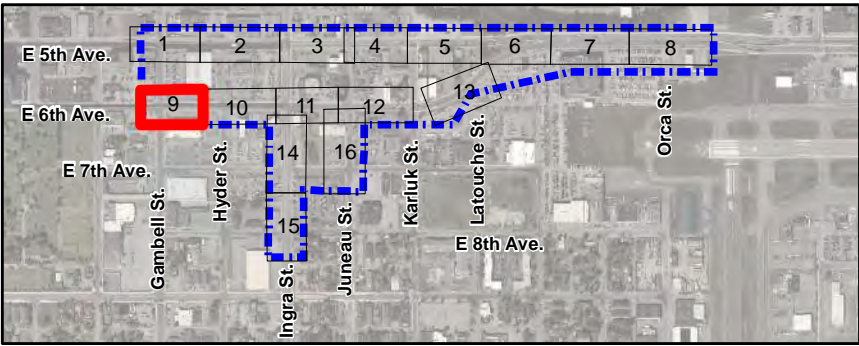
Pipe Segment

- Inspected
- Not Inspected

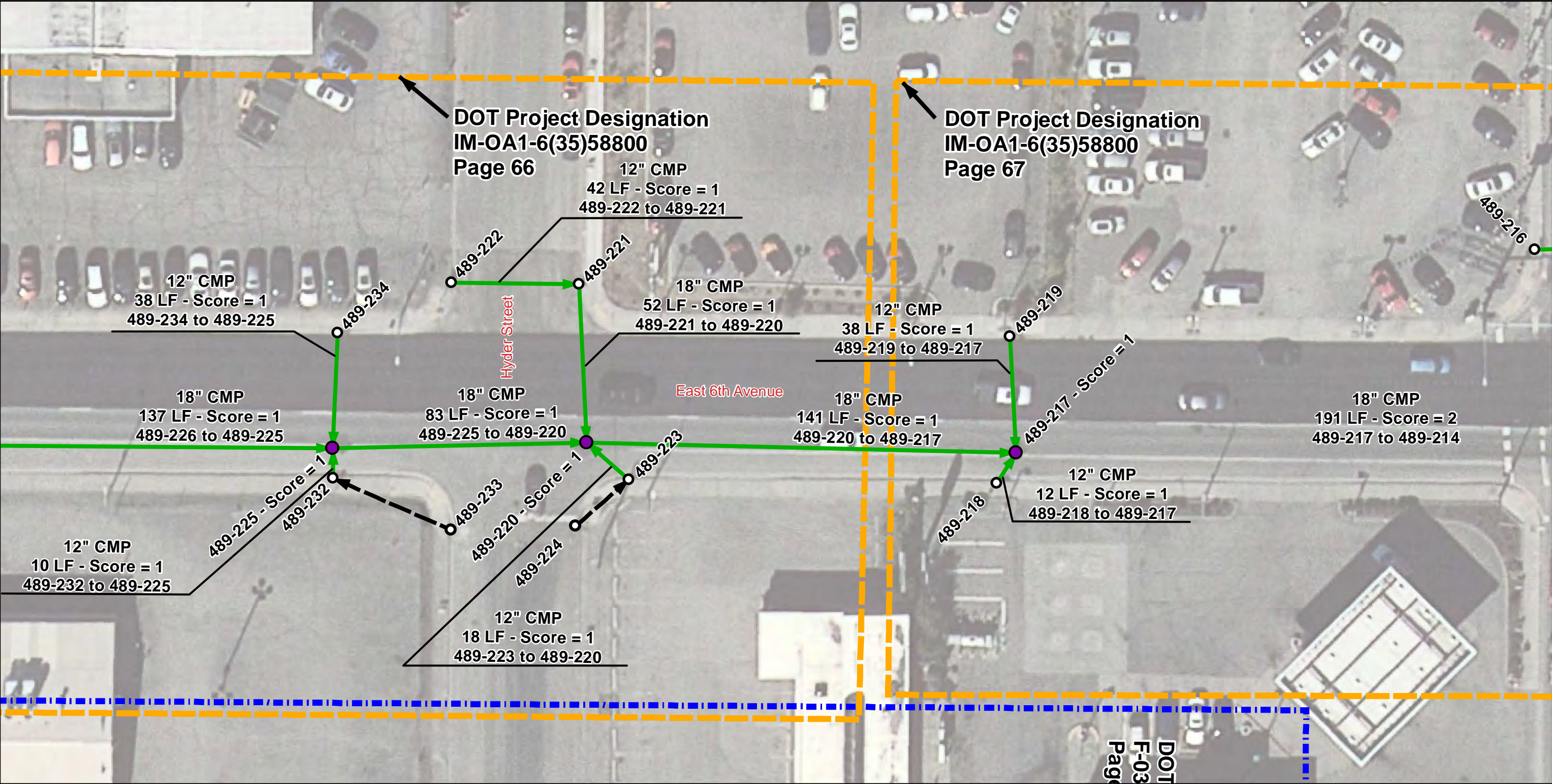
Score

- 0 - No Defect
- 1 - Minor Defect
- 2 - Minor to Moderate Defect
- 3 - Moderate Defect
- 4 - Significant Defect
- 5 - Most Significant Defect
- N - Not Scored

- Project Area
- Asbuilt Designation



East 6th Avenue: Gambell Street to Latouche Street



0 20 40 Feet

Legend

Manhole/Catchbasin

- Not Inspected
- Inspected

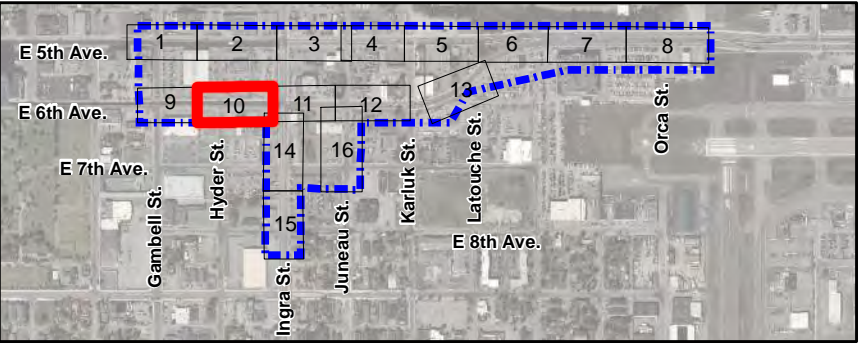
Pipe Segment

- Inspected
- Not Inspected

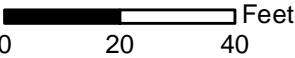
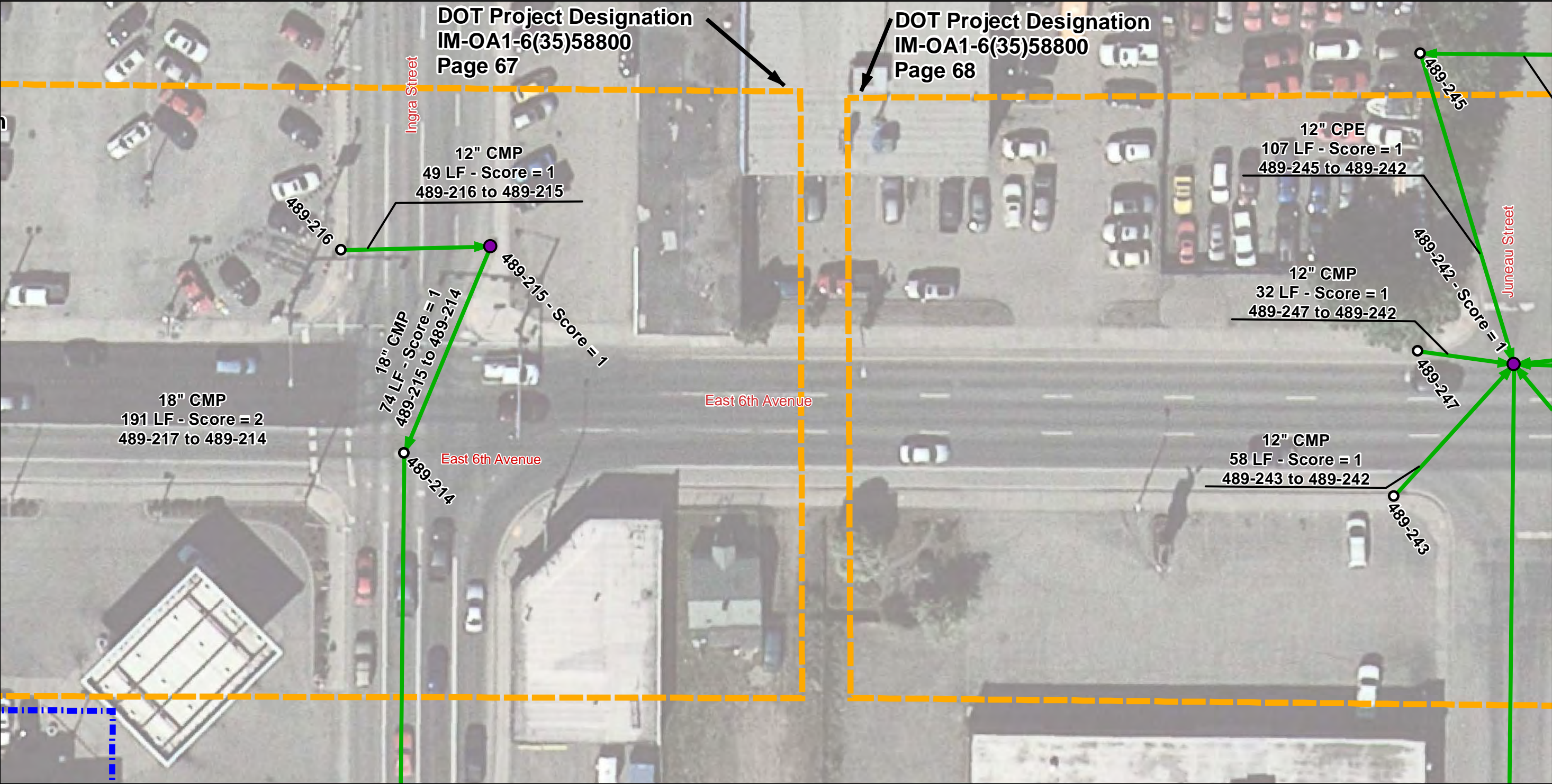
Score

- 0 - No Defect
- 1 - Minor Defect
- 2 - Minor to Moderate Defect
- 3 - Moderate Defect
- 4 - Significant Defect
- 5 - Most Significant Defect
- N - Not Scored

- Project Area
- Asbuilt Designation



East 6th Avenue: Gambell Street to Latouche Street



Legend

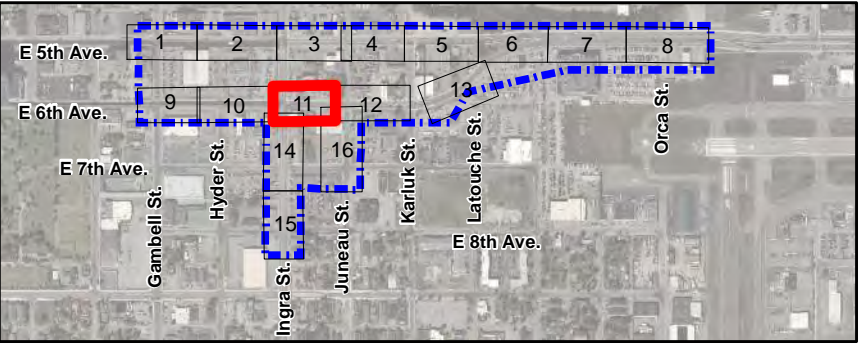
- Project Area

Asbuilt Designation
- Not Inspected

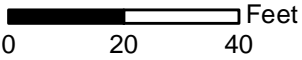
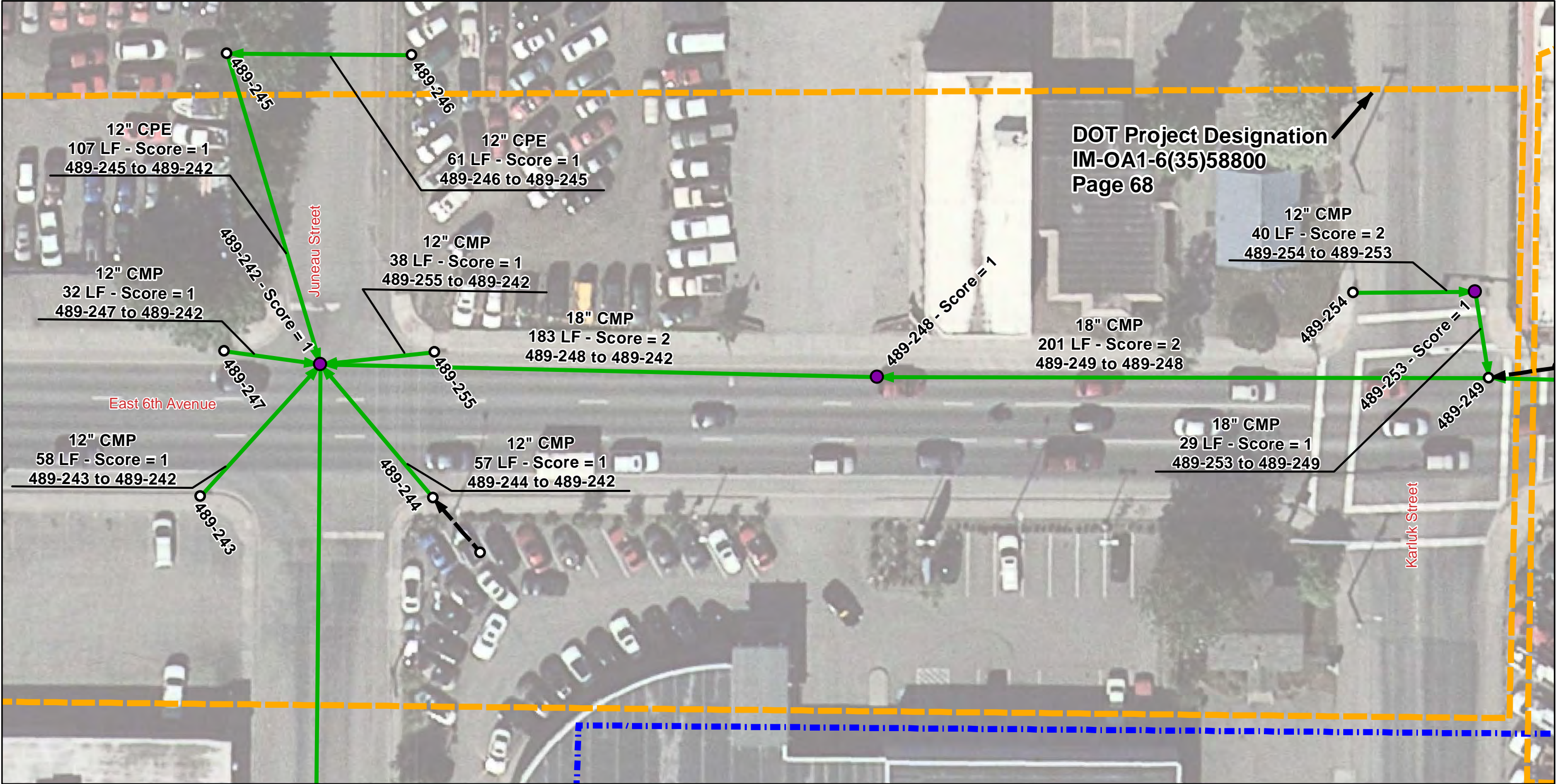
Inspected
- Inspected

Not Inspected

- Score**
- 0 - No Defect
 - 1 - Minor Defect
 - 2 - Minor to Moderate Defect
 - 3 - Moderate Defect
 - 4 - Significant Defect
 - 5 - Most Significant Defect
 - N - Not Scored



East 6th Avenue: Gambell Street to Latouche Street



Legend

- Project Area

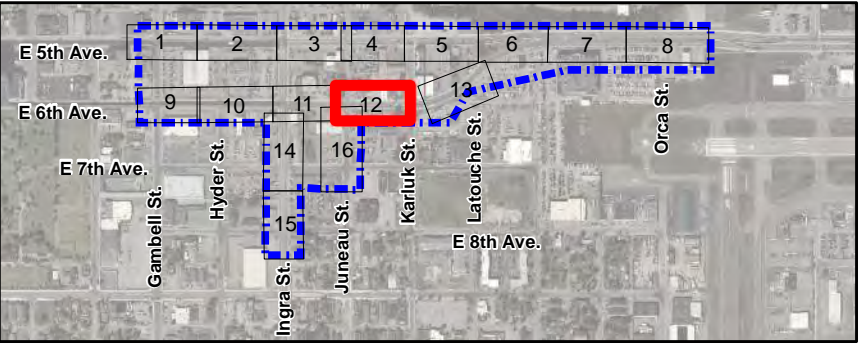
Asbuilt Designation
- Not Inspected

Inspected
- Pipe Segment

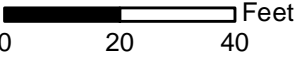
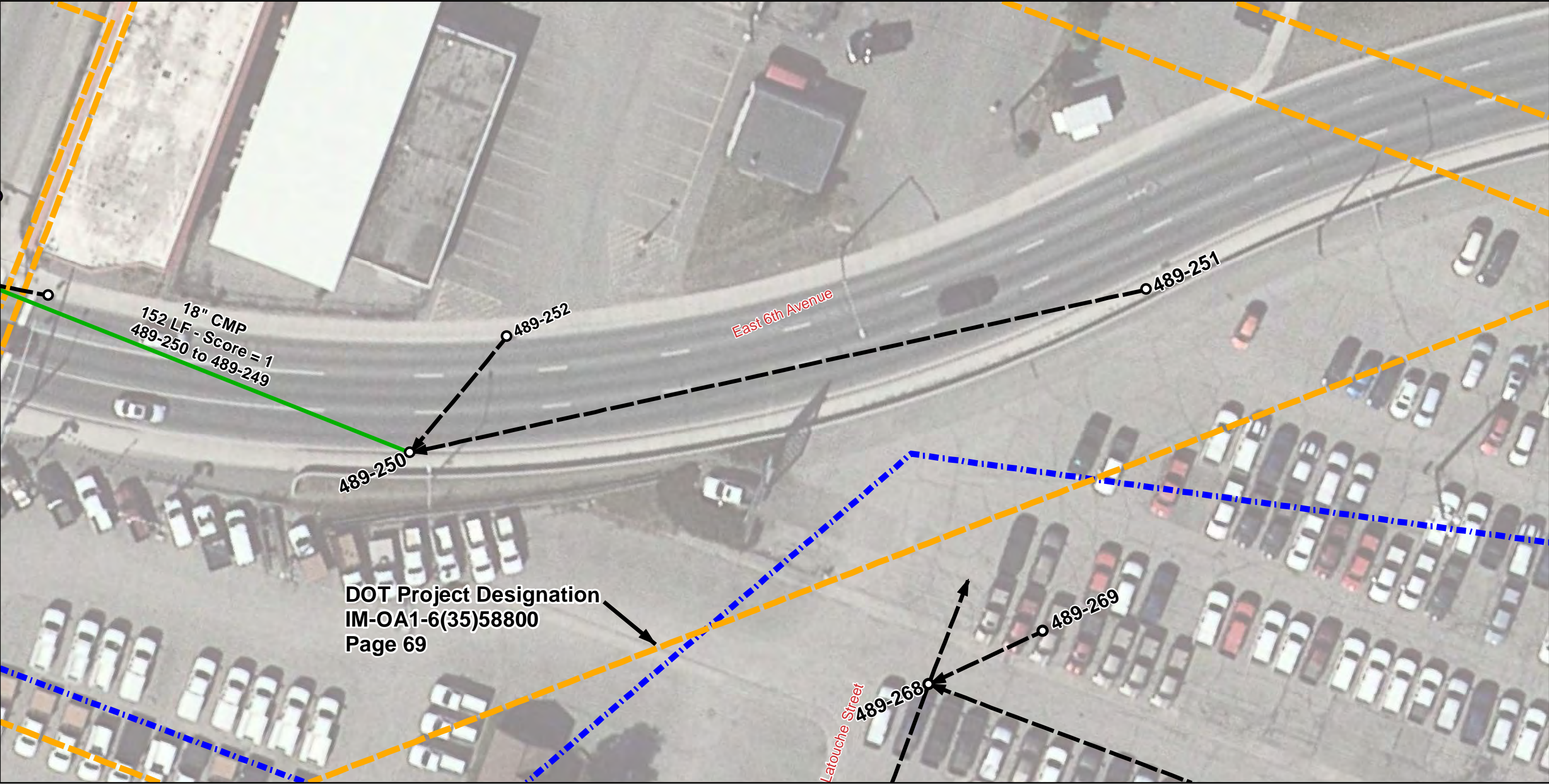
Inspected

Not Inspected

- Score**
- 0 - No Defect
 - 1 - Minor Defect
 - 2 - Minor to Moderate Defect
 - 3 - Moderate Defect
 - 4 - Significant Defect
 - 5 - Most Significant Defect
 - N - Not Scored



East 6th Avenue: Gambell Street to Latouche Street



Legend

- Project Area
- Asbuilt Designation

Manhole/Catchbasin

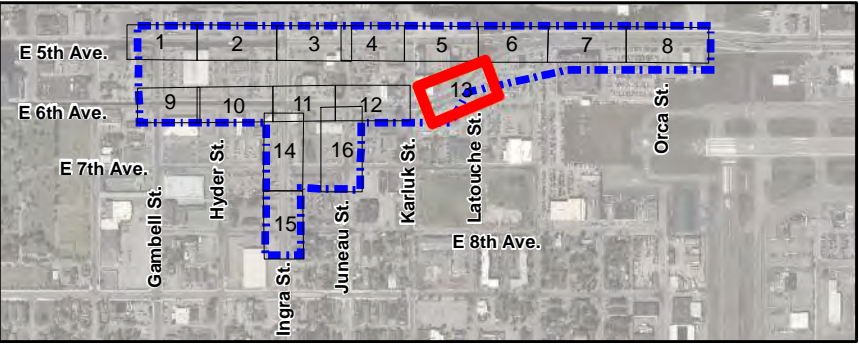
- Not Inspected
- Inspected

Pipe Segment

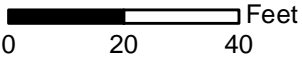
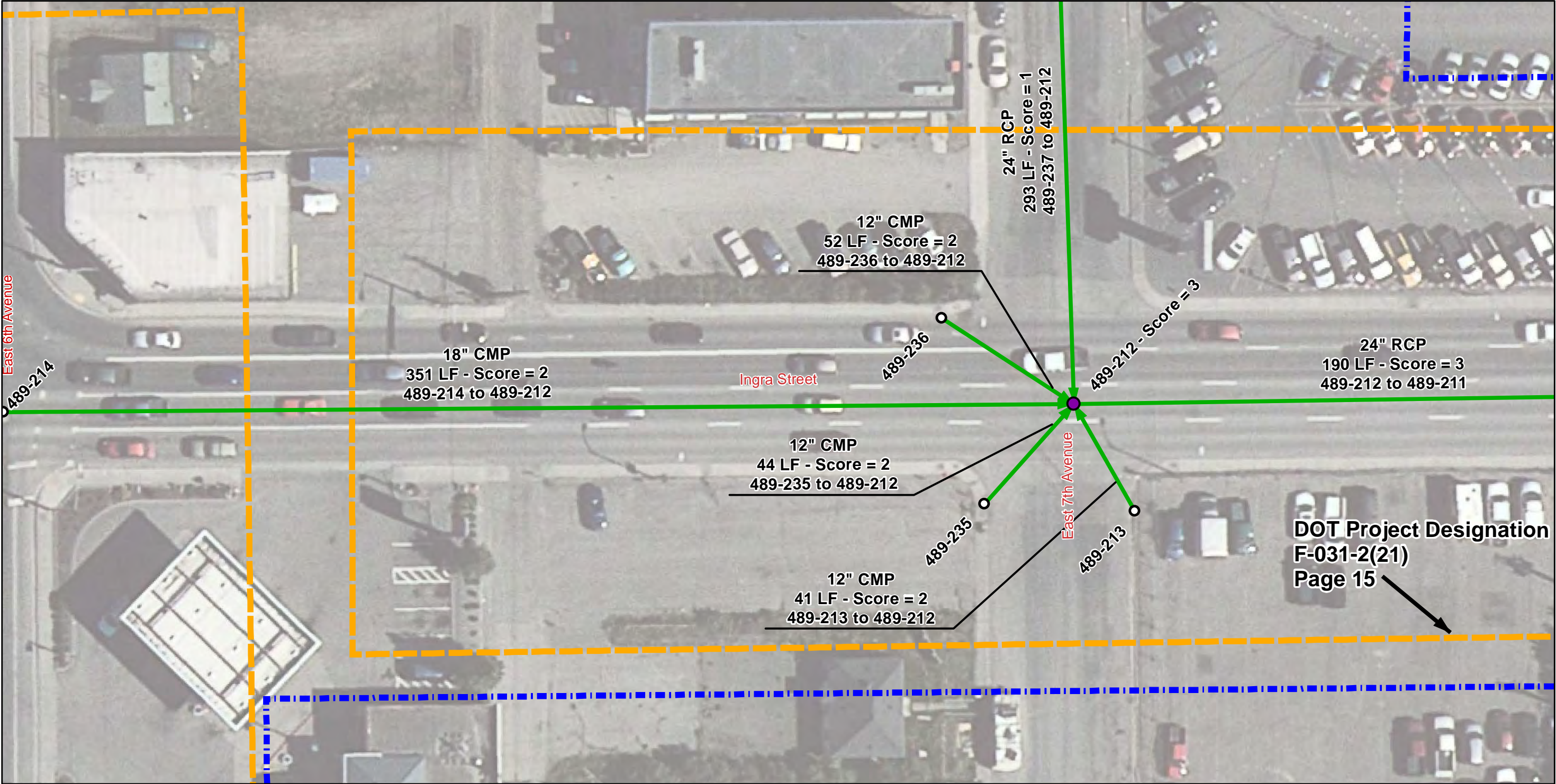
- Inspected
- Not Inspected

Score

- 0 - No Defect
- 1 - Minor Defect
- 2 - Minor to Moderate Defect
- 3 - Moderate Defect
- 4 - Significant Defect
- 5 - Most Significant Defect
- N - Not Scored



Ingra Street: East 6th Avenue to East 8th Avenue



Legend

Manhole/Catchbasin

- Not Inspected
- Inspected

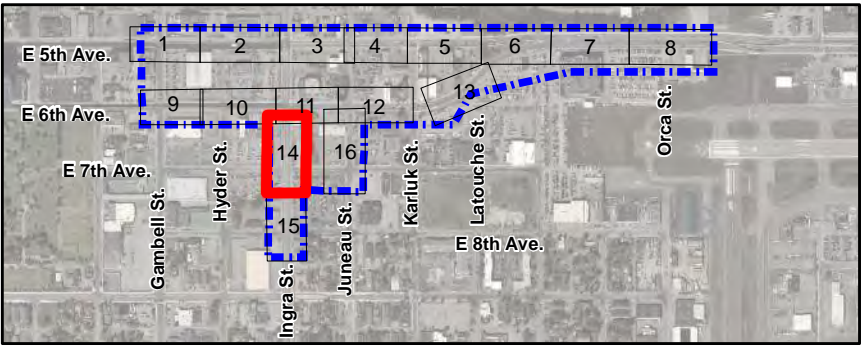
Pipe Segment

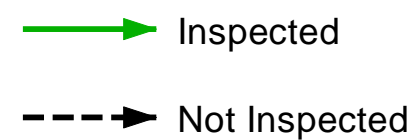
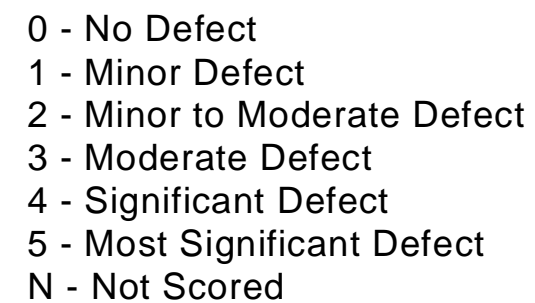
- Inspected
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Score

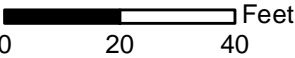
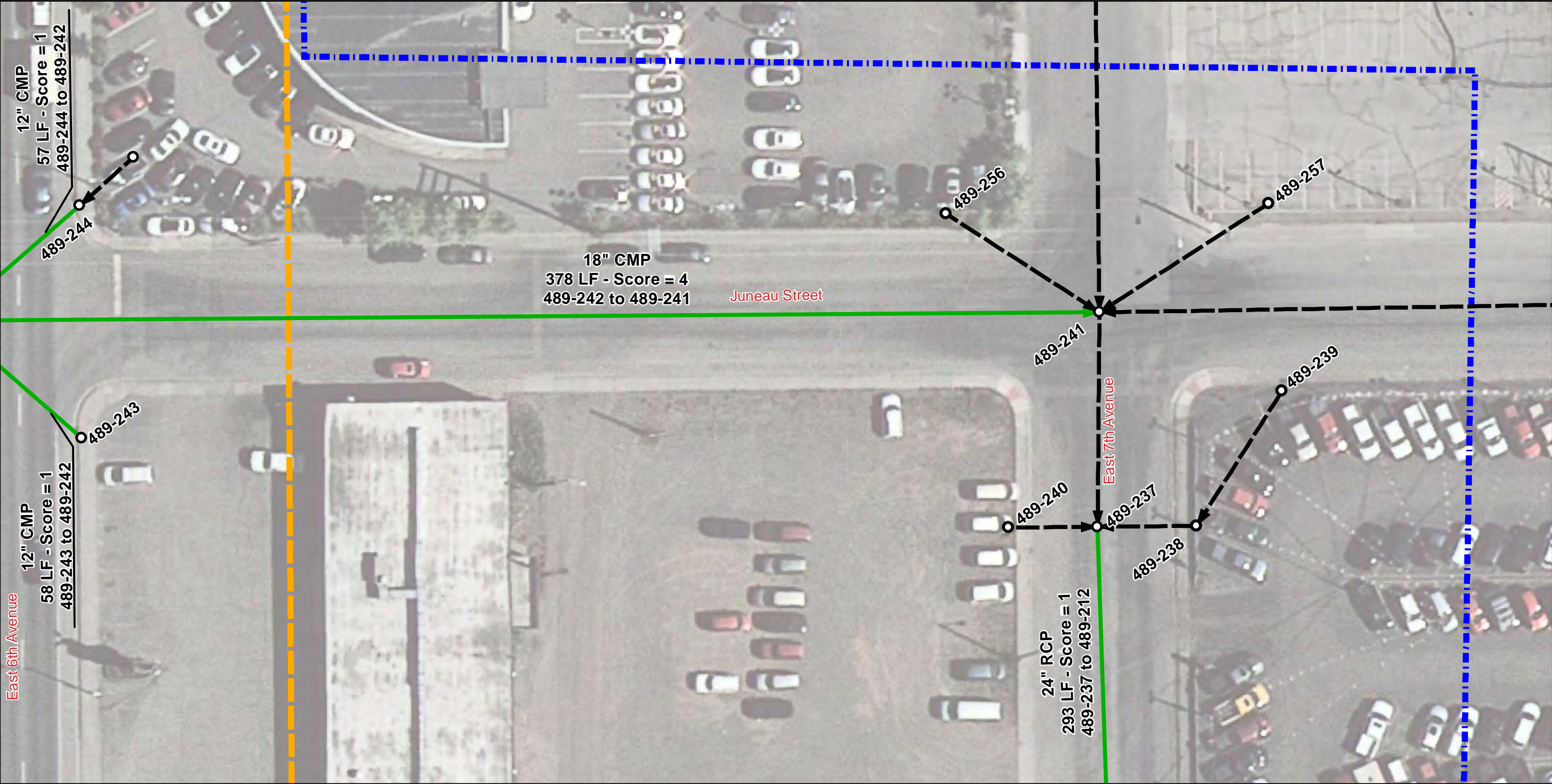
- 0 - No Defect
- 1 - Minor Defect
- 2 - Minor to Moderate Defect
- 3 - Moderate Defect
- 4 - Significant Defect
- 5 - Most Significant Defect
- N - Not Scored

- Project Area
- Asbuilt Designation





Juneau Street: East 6th Avenue to East 7th Avenue



Legend

- Project Area
- Asbuilt Designation

Manhole/Catchbasin

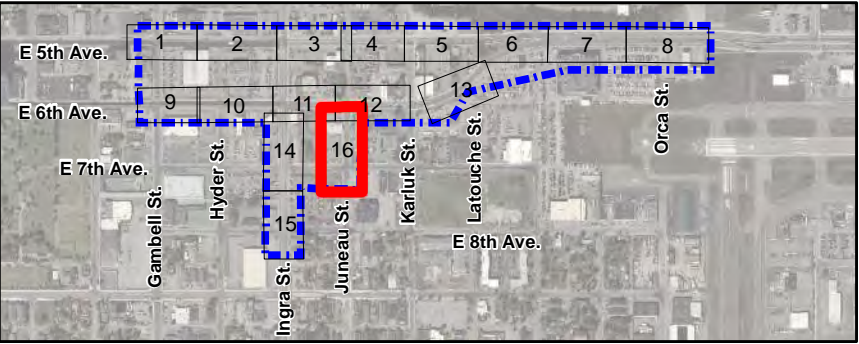
- Not Inspected
- Inspected

Pipe Segment

- Inspected
- Not Inspected

Score

- 0 - No Defect
- 1 - Minor Defect
- 2 - Minor to Moderate Defect
- 3 - Moderate Defect
- 4 - Significant Defect
- 5 - Most Significant Defect
- N - Not Scored



CCTV Data Summary and Inspection Logs

CR NHS Storm Drain Condition Report
Proj. No. 0A31055 / Z591280000

	NHS Storm Drain Inspections Downtown (5th and 6th Ave., Gambell to Orca St. and Ingra Street, 6th Ave. to 8th Ave.)			Defect grades: 0=No Defect, 1=Minor Defect, 2=Minor to Moderate Defect, 3=Moderate Defect, 4=Significant Defect, 5=Most Significant Defect									
		Avg. Height	Material	Condition of Components									
Page # in Appendix A	Upstream Structure No.	Downstream Structure No.	Location	Pipe Dia. (in.)	Material	CCTV Complete	CCTV Date	CCTV Length (ft.)	GIS Length (ft.)	CCTV Direction	General Condition Grade Score	Flow Depth (in.)	Additional Comments
3	213-52	213-48	South 5th Avenue east of Ingra Street	24	CMP	Yes	10/3/2018	238	238	Downstream	1	0-1"	No major defects observed
	213-54	213-52	5th Avenue east of Ingra Street	12	CMP	Yes	10/3/2018	49	51	Upstream	2	None	Deformations in pipe
	213-53	213-52	South 5th Avenue east of Ingra Street	12	CMP	Yes	10/3/2018	12	16	Upstream	1	None	No major defects observed
	213-55	213-52	South 5th Avenue at Juneau Street	21	CMP	Yes	10/3/2018	140	143	Upstream	1	0-1"	Discoloration, possible bellies, no major structural defects
	213-87	213-55	5th Avenue at Juneau Street	12	CMP	No	10/1/2018	23	53	Upstream	1	None	Stopped by debris at Sta. 0+22, no defects observed
	213-86	213-55	South 5th Avenue at Juneau Street	12	CMP	Yes	10/1/2018	9	11	Upstream	1	None	No defects observed
4	213-56	213-55	South 5th Avenue east of Juneau Street	21	CMP	Yes	10/2/2018	193	197	Downstream	1	Minimal	Flow increases toward downstream, no major defects observed
	213-57	213-56	South 5th Avenue at Karluk Street	18	CMP	Yes	10/2/2018	194	213	Upstream	1	0-1"	Various amounts of debris in pipe, possible bellies
5	213-58	213-57	5th Avenue east of Karluk Street	12	CMP	Yes	10/1/2018	49	51	Upstream	1	None	Debris buildup at joints, surface discoloration
	213-59	213-57	South 5th Avenue east of Karluk St.	12	CMP	Yes	10/1/2018	7	10	Upstream	1	None	No defects observed
	213-60	213-57	South 5th Avenue east of Karluk St.	21	CMP	Yes	10/2/2018	278	267	Downstream	1	0-1"	Various amounts of debris in pipe, discoloration, possible corrosion in invert, possible bellies
	213-61	213-60	5th Avenue east of Karluk St.	12	CMP	No	10/1/2018	41	51	Upstream	1	None	Stopped by debris at Sta. 0+41, no major defects observed
	213-62	213-60	South 5th Avenue east of Karluk St.	12	CMP	Yes	10/1/2018	7	10	Upstream	1	None	No defects observed
6	213-63	213-60	South 5th Avenue east of Karluk St.	18	CMP	Yes	10/2/2018	268	271	Upstream	1	0-1"	Various amounts of debris in pipe, possible bellies
9	489-229	489-226	South 6th Ave. east of Gambell Street	18	CMP	Yes	10/3/2018	160	164	Upstream	1	None	0-3" of debris throughout pipe, no major defects observed
	489-228	489-226	6th Ave. east of Gambell Street	12	CMP	No	10/3/2018	25	38	Upstream	1	None	Stopped by debris, no major defects observed
	489-227	489-226	South 6th Ave. east of Gambell Street	12	CMP	Yes	10/3/2018	5	9	Upstream	1	None	No major defects observed
	489-226	489-225	South 6th Ave. east of Gambell Street	18	CMP	Yes	10/3/2018	135	137	Downstream	1	Minimal	Debris in pipe, no major defects observed
	489-234	489-225	6th Ave. west of Hyder Street	12	CMP	Yes	10/4/2018	35	38	Upstream	1	None	Debris buildup, possible belly
	489-232	489-225	South 6th Ave. west of Hyder Street	12	CMP	No	10/4/2018	N/A	10	Upstream	1	None	Pipe Photographed, no defects observed
10	489-225	489-220	South 6th Ave. at Hyder Street	18	CMP	Yes	10/3/2018	76	83	Downstream	1	Minimal	Debris in pipe, no major defects observed

CR NHS Storm Drain Condition Report
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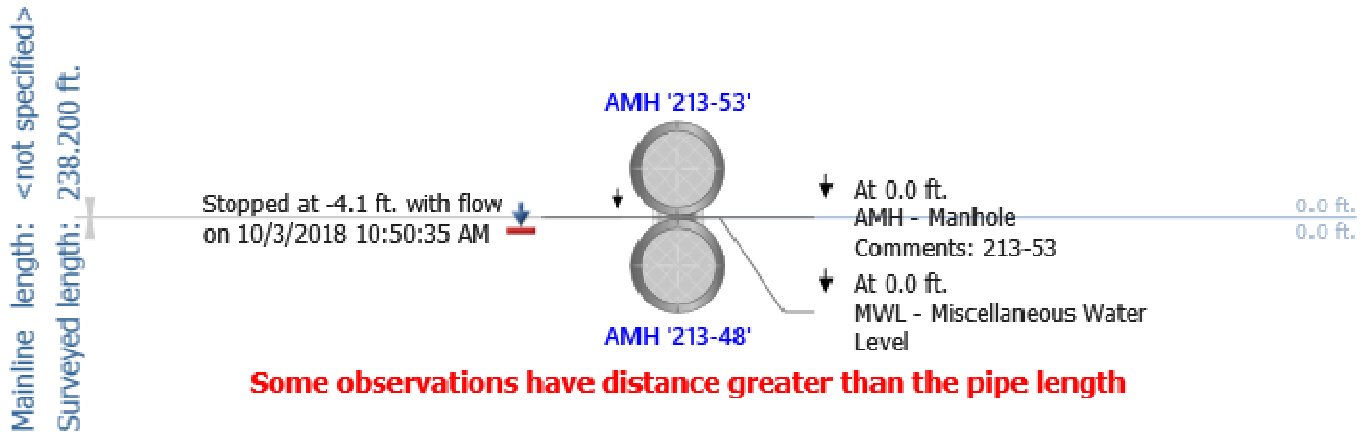
	NHS Storm Drain Inspections Downtown (5th and 6th Ave., Gambell to Orca St. and Ingra Street, 6th Ave. to 8th Ave.)			Defect grades: 0=No Defect, 1=Minor Defect, 2=Minor to Moderate Defect, 3=Moderate Defect, 4=Significant Defect, 5=Most Significant Defect									
		Avg. Height	Material	Condition of Components									
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10	489-222	489-221	North 6th Ave. at Hyder St.	12	CMP	Yes	10/11/2018	41	42	Upstream	1	Minimal	Minimal debris in pipe, no major defects observed
	489-221	489-220	6th Ave. at Hyder Street	18	CMP	Yes	10/4/2018	51	52	Upstream	1	Minimal	Minimal debris in pipe, no major defects observed
	489-223	489-220	South 6th Ave. at Hyder Street	12	CMP	Yes	10/4/2018	16	18	Upstream	1	None	No defects observed
	489-220	489-217	South 6th Ave. east of Hyder Street	18	CMP	Yes	10/4/2018	138	141	Upstream	1	Minimal	Horizontal deflection at joint, debris in pipe
	489-219	489-217	6th Ave. west of Ingra Street	12	CMP	Yes	10/4/2018	35	38	Upstream	1	None	Horizontal deflection at joint
	489-218	489-217	South 6th Ave. west of Ingra Street	12	CMP	No	10/4/2018	N/A	12	Upstream	1	None	Pipe Photographed, minimal debris, no major defects
	489-217	489-214	South 6th Ave. west of Ingra Street	18	CMP	Yes	10/4/2018	186	191	Downstream	2	0-1"	Root infiltration at joints
11	489-216	489-215	North 6th Ave. at Ingra Street	12	CMP	Yes	10/11/2018	43	49	Upstream	1	Minimal	No major defects observed
	489-215	489-214	North 6th Ave. at Ingra Street	18	CMP	Yes	11/6/2018	72	74	Downstream	1	None	No major defects observed, debris, discoloration, possible corrosion
12	489-246	489-245	Juneau Street north of 6th Ave.	12	CPEP	Yes	10/11/2018	30	61	Upstream	1	0-1"	No major defects observed
	489-245	489-242	Juneau Street north of 6th Ave.	12	CPEP	Yes	10/11/2018	139	107	Downstream	1	0-1"	One debris buildup at 73 LF, no major defects observed
	489-247	489-242	6th Avenue at Juneau Street	12	CMP	Yes	10/12/2018	22	32	Upstream	1	Minimal	No major defects observed
	489-243	489-242	6th Avenue at Juneau Street	12	CMP	Yes	10/12/2018	49	59	Upstream	1	Minimal	Debris, no major defects
	489-255	489-242	6th Avenue at Juneau Street	12	CMP	Yes	10/12/2018	39	38	Upstream	1	Minimal	No major defects observed
	489-244	489-242	6th Avenue at Juneau Street	12	CMP	Yes	10/12/2018	56	57	Upstream	1	Minimal	Debris buildups, no major defects observed
	489-248	489-242	6th Avenue at Juneau Street	18	CMP	Yes	10/12/2018	187	183	Upstream	2	Minimal	Possible surface corrosion in invert, discoloration, no major defects
	489-249	489-248	North 6th Avenue west of Karluk Street	18	CMP	Yes	10/12/2018	192	201	Upstream	2	Minimal	Possible surface corrosion in invert, no major defects
	489-254	489-253	North 6th Avenue at Karluk Street	12	CMP	No	10/12/2018	27	40	Upstream	2	Minimal	Stopped by debris
	489-253	489-249	North 6th Avenue at Karluk Street	18	CMP	Yes	10/12/2018	26	29	Upstream	1	Minimal	No major defects observed
13	489-250	489-249	North 6th Avenue at Karluk Street	18	CMP	Yes	10/12/2018	163	152	Upstream	1	Minimal	No major defects observed
14	489-214	489-212	West Ingra Street between 6th and 7th Ave.	18	CMP	Yes	11/5/2018	346	351	Upstream	2	Minimal	Possible surface corrosion in invert, various discoloration and minor deformations

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	NHS Storm Drain Inspections Downtown (5th and 6th Ave., Gambell to Orca St. and Ingra Street, 6th Ave. to 8th Ave.)			Defect grades: 0=No Defect, 1=Minor Defect, 2=Minor to Moderate Defect, 3=Moderate Defect, 4=Significant Defect, 5=Most Significant Defect									
		Avg. Height	Material	Condition of Components									
Page # in Appendix A	Upstream Structure No.	Downstream Structure No.	Location	Pipe Dia. (in.)	Material	CCTV Complete	CCTV Date	CCTV Length (ft.)	GIS Length (ft.)	CCTV Direction	General Condition Grade Score	Flow Depth (in.)	Additional Comments
14	489-235	489-212	West Ingra Street at 7th Avenue	12	CMP	Yes	11/2/2018	44	44	Upstream	2	None	Surface corrosion/discoloration, horizontal deflection at 42 LF
	489-213	489-212	West Ingra Street at 7th Avenue	12	CMP	Yes	11/5/2018	37	41	Upstream	2	None	Surface corrosion/discoloration in invert, horizontal deflections at upstream end
	489-236	489-212	East Ingra Street at 7th Avenue	12	CMP	Yes	11/5/2018	52	52	Upstream	2	None	Surface corrosion in invert, no major structural defects
	489-237	489-212	Ingra Street at 7th Avenue	24	RCP	Yes	11/5/2018	103	293	Upstream	1	None	Partial survey, no major defects observed
	489-212	489-211	West Ingra Street between 7th and 8th Ave	24	RCP	Yes	11/2/2018	188	190	Upstream	3	Minimal	Possible bellies, pipe broken where pipe bored through
15	489-280	489-211	West Ingra Street between 7th and 8th Ave	12	CMP	Yes	11/2/2018	17	21	Upstream	1	None	No major defects observed
	489-281	489-211	East Ingra Street between 7th and 8th Ave	12	CMP	Yes	11/2/2018	30	29	Upstream	2	None	Surface corrosion, minor debris, grout/debris in upstream end
	489-211	489-210	West Ingra Street between 7th and 8th Ave	24	RCP	Yes	11/2/2018	156	156	Downstream	1	None	No major defects observed
	489-283	489-210	West Ingra Street at 8th Ave	12	CMP	Yes	11/5/2018	48	51	Upstream	2	Minimal	Surface corrosion in invert, no major structural defects
	489-282	489-210	East Ingra Street at 8th Ave	12	CMP	Yes	11/5/2018	54	53	Upstream	2	None	Surface corrosion, debris buildup, horizontal deflection at midspan of pipe
16	489-242	489-241	6th Avenue at Juneau Street	18	CMP	Yes	10/12/2018	18	378	Downstream	4	0-1"	Stopped by pipe defect, pipe rotting, at considerable risk for collapse

Main Inspections Pipe Run

Project name:	Mainline ID:	City:	Street:
Downtown 5th and 6th	213-52 to 213-48	Anchorage	5th
Start date/time:	Direction:	Weather:	Location code:
10/3/2018 10:11 AM	D		
Shape:	Material:	Height:	Width:
C	CMP	24 in.	

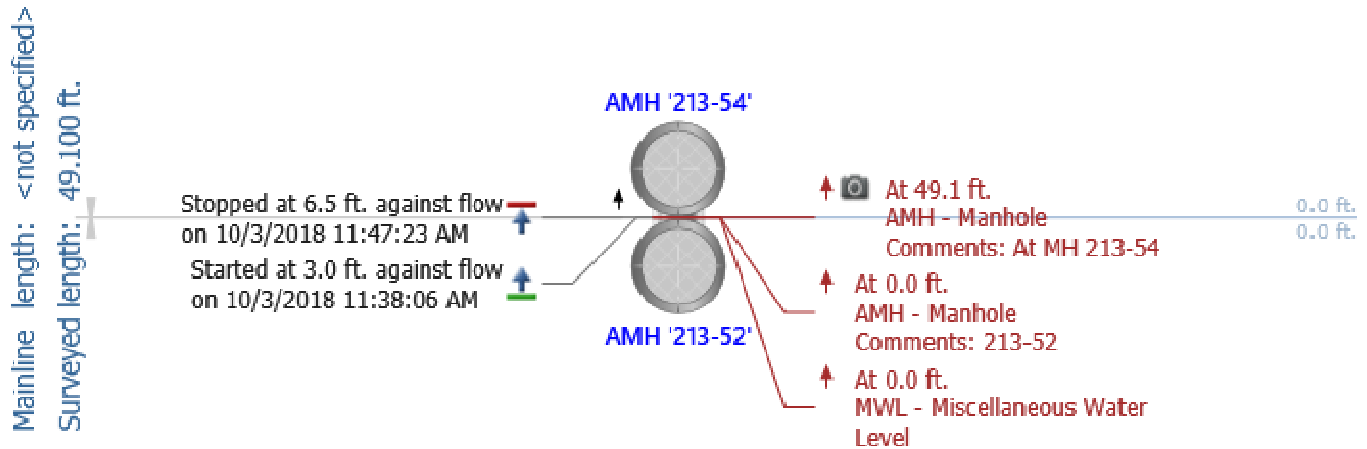


Notes: 213-52 to 213-48

- 24-in. CMP
- 238 LF
- 0-1" of debris
- No major defects observed
- Flow: 0-1"
- Grade score of: 1

Main Inspections Pipe Run

Project name:	Mainline ID:	City:	Street:
Downtown 5th and 6th	213-54 to 213-52	Anchorage	5th
Start date/time:	Direction:	Weather:	Location code:
10/3/2018 11:38 AM	U		
Shape:	Material:	Height:	Width:
C	CMP	12 in.	

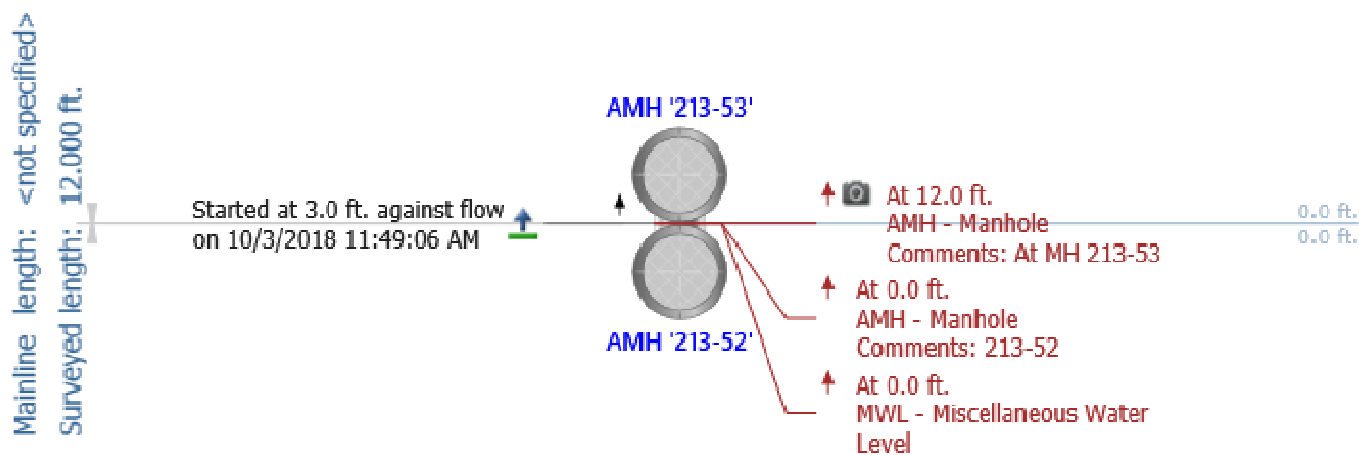


Notes: 213-54 to 213-52

- 12-in. CMP
- 49 LF
- 1-2" deformation, 12:00 position at 34 LF to about 43 LF
- Horizontal deflection at 40 LF
- Defects do not appear to inhibit flow properties of pipe
- Flow: None
- Grade score of: 2

Main Inspections Pipe Run

Project name:	Mainline ID:	City:	Street:
Downtown 5th and 6th	213-53 to 213-52	Anchorage	5th
Start date/time:	Direction:	Weather:	Location code:
10/3/2018 11:49 AM	U		
Shape:	Material:	Height:	Width:
C	CMP	12 in.	



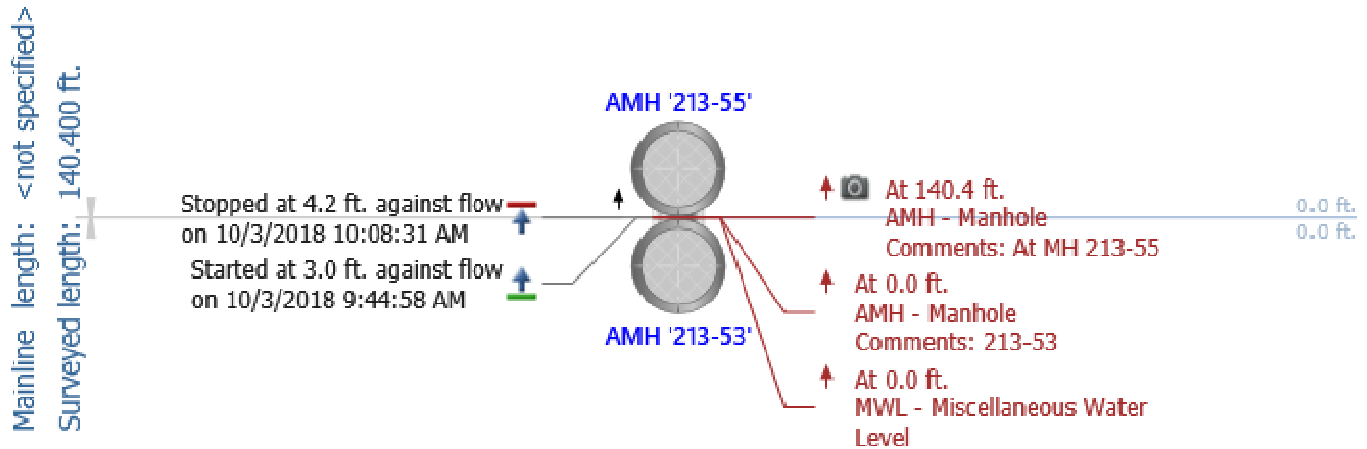
Some observations have distance greater than the pipe length

Notes: 213-53 to 213-52

- 12-in. CMP
- 12 LF
- No major defects observed
- Flow: None
- Grade score of: 1

Main Inspections Pipe Run

Project name:	Mainline ID:	City:	Street:
Downtown 5th and 6th	213-55 to 213-52	Anchorage	5th
Start date/time:	Direction:	Weather:	Location code:
10/3/2018 9:44 AM	U		
Shape:	Material:	Height:	Width:
C	CMP	21 in.	

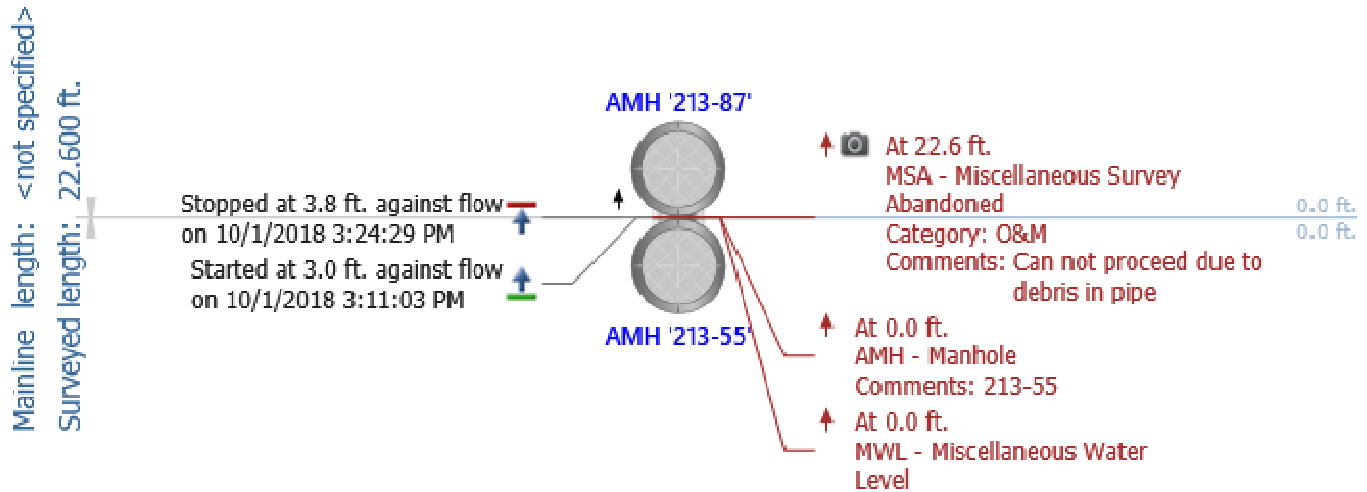


Notes: 213-55 to 213-52

- 21-in. CMP
- 140 LF
- Discoloration in bottom half of pipe
- Possible bellies upstream of various joints
- No major structural defects observed
- Flow: 0-1"
- Grade score of: 1

Main Inspections Pipe Run

Project name:	Mainline ID:	City:	Street:
Downtown 5th and 6th	213-87 to 213-55	Anchorage	5th
Start date/time:	Direction:	Weather:	Location code:
10/1/2018 3:11 PM	U		
Shape:	Material:	Height:	Width:
C	CMP	12 in.	

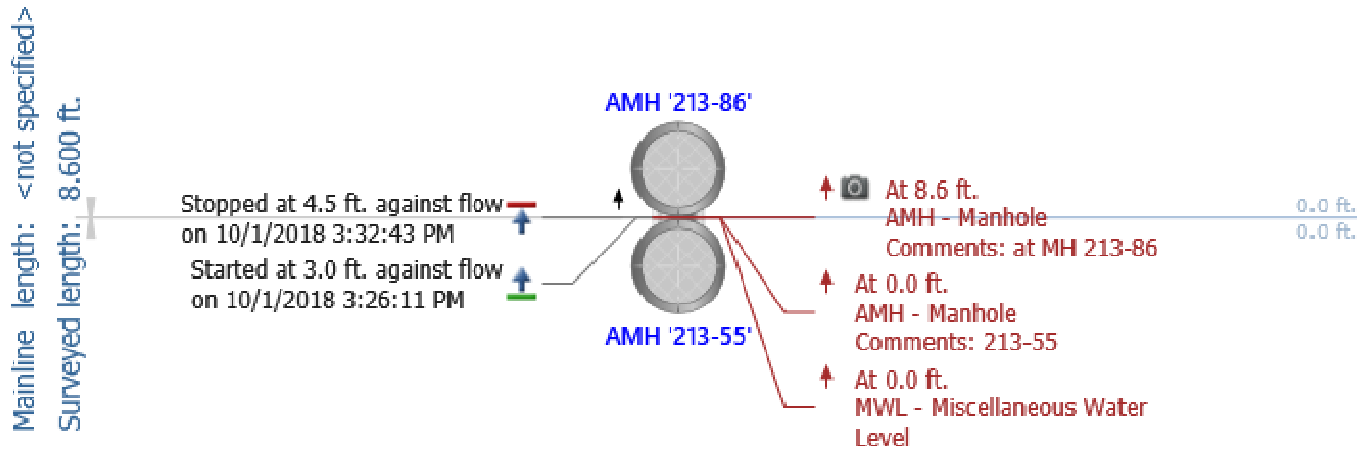


Notes: 213-87 to 213-55

- 12-in. CMP
- 53 LF
- Survey abandoned due to debris buildup at 22.6 LF, unable to identify, no defects observed.
- Flow: None
- Grade score of: 1

Main Inspections Pipe Run

Project name:	Mainline ID:	City:	Street:
Downtown 5th and 6th	213-86 to 213-55	Anchorage	5th
Start date/time:	Direction:	Weather:	Location code:
10/1/2018 3:26 PM	U		
Shape:	Material:	Height:	Width:
C	CMP	12 in.	

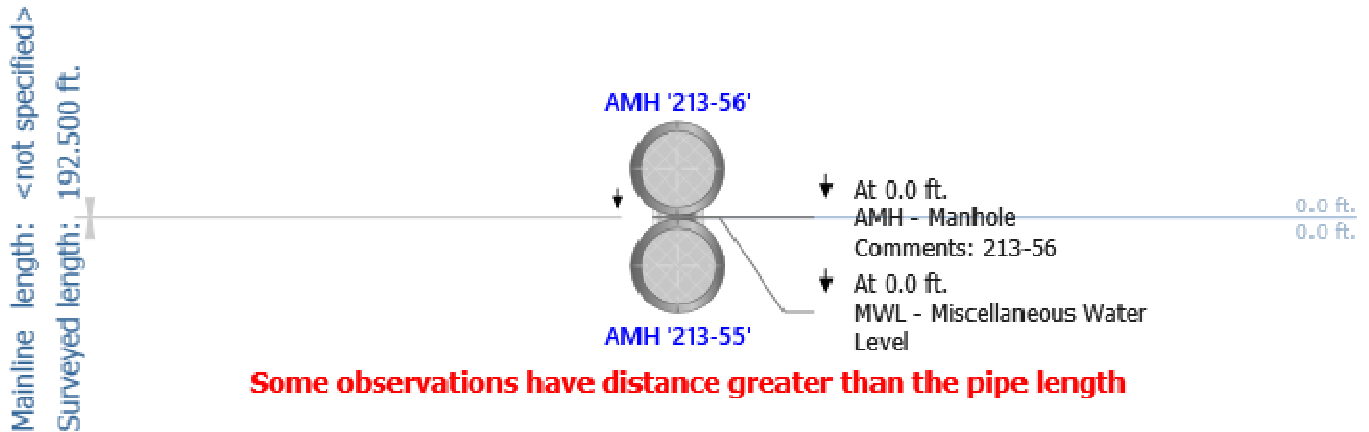


Notes: 213-86 to 213-55

- 12-in. CMP
- 9 LF
- No defects observed
- Flow: None
- Grade score of: 1

Main Inspections Pipe Run

Project name:	Mainline ID:	City:	Street:
Downtown 5th and 6th	213-56 to 213-55	Anchorage	5th
Start date/time:	Direction:	Weather:	Location code:
10/2/2018 3:20 PM	D		
Shape:	Material:	Height:	Width:
C	CMP	21 in.	

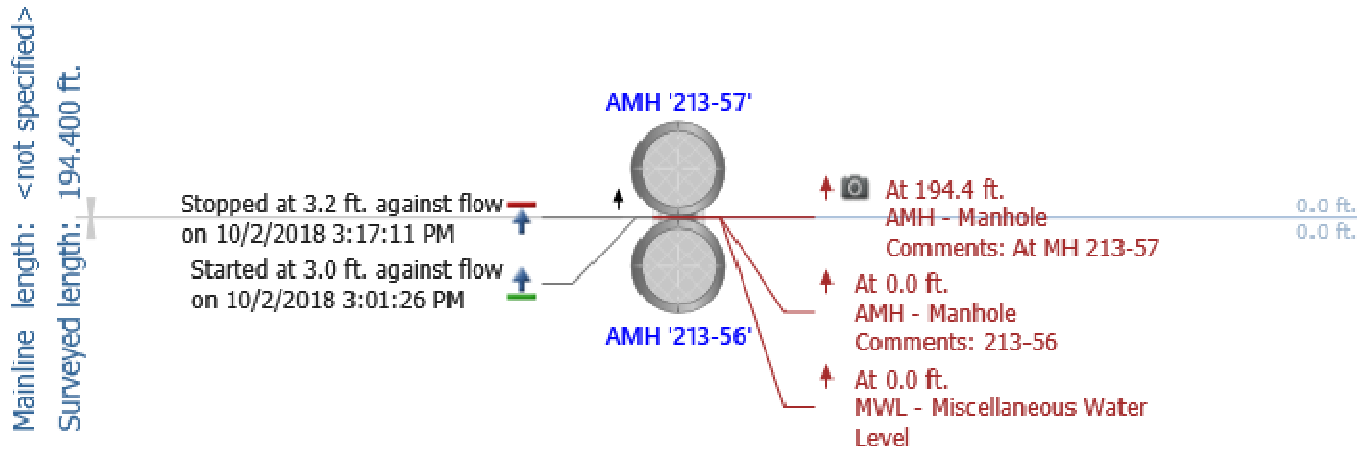


Notes: 213-56 to 213-55

- 21-in. CMP
- 193 LF
- Discoloration in bottom half of pipe
- 0-1" of debris throughout pipe
- No major defects observed
- Flow: 0-1"
- Grade score of: 1

Main Inspections Pipe Run

Project name:	Mainline ID:	City:	Street:
Downtown 5th and 6th	213-57 to 213-56	Anchorage	5th
Start date/time:	Direction:	Weather:	Location code:
10/2/2018 3:01 PM	U		
Shape:	Material:	Height:	Width:
C	CMP	21 in.	

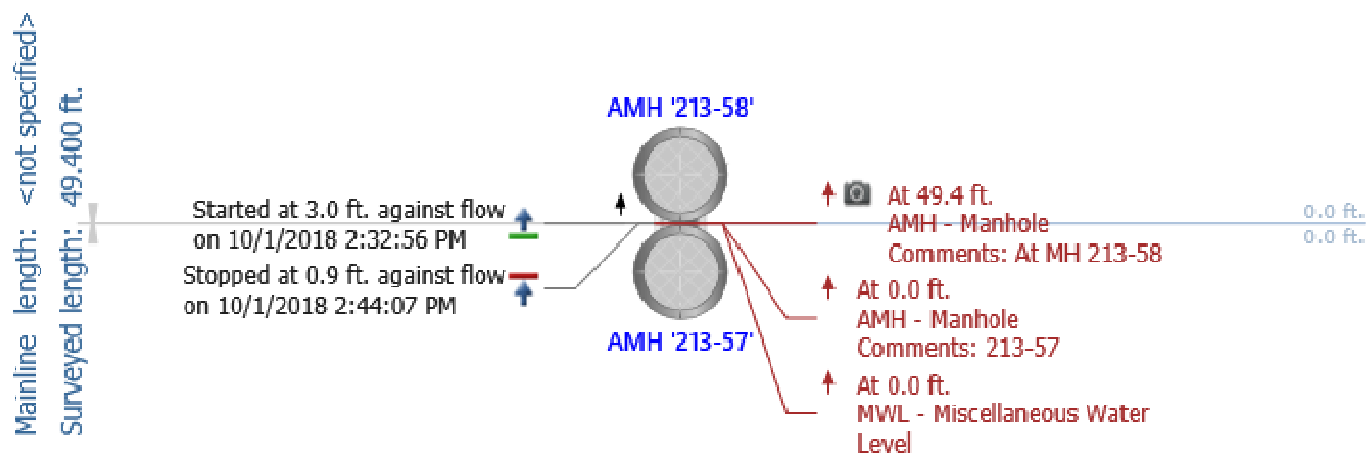


Notes: 213-57 to 213-56

- 21-in. CMP
- 194 LF
- 0-1" debris at 20 LF, varies throughout pipe
- Possible bellies upstream of joints
- Flow: 0-1"
- Grade score of: 1

Main Inspections Pipe Run

Project name:	Mainline ID:	City:	Street:
Downtown 5th and 6th	213-58 to 213-57	Anchorage	5th
Start date/time:	Direction:	Weather:	Location code:
10/1/2018 2:32 PM	U		
Shape:	Material:	Height:	Width:
C	CMP	12 in.	

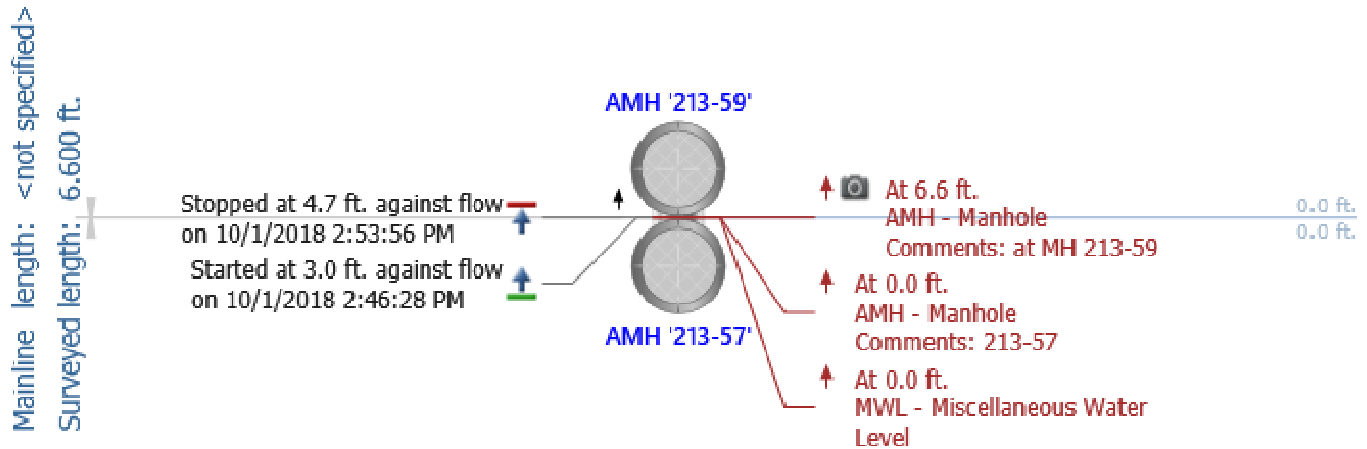


Notes: 213-58 to 213-57

- 12-in. CMP
- 49 LF
- Discoloration in 4:00 and 8:00 position from throughout pipe.
- Corrosion on spigot edge and debris buildup at joints, 18 LF and 38 LF
- Flow: None
- Grade score of: 1

Main Inspections Pipe Run

Project name:	Mainline ID:	City:	Street:
Downtown 5th and 6th	213-59 to 213-57	Anchorage	5th
Start date/time:	Direction:	Weather:	Location code:
10/1/2018 2:46 PM	U		
Shape:	Material:	Height:	Width:
C	CMP	12 in.	

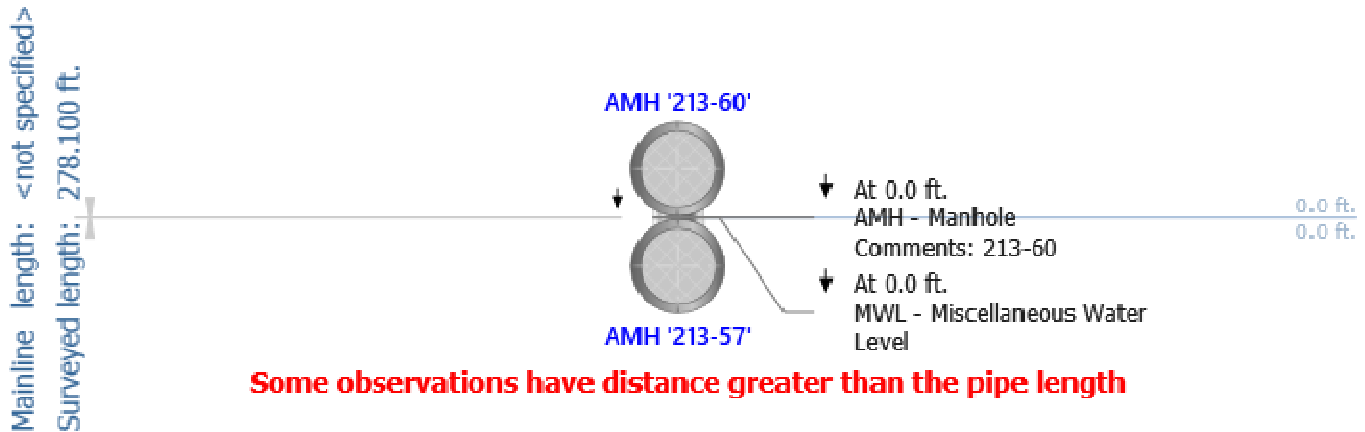


Notes: 213-59 to 213-57

- 12-in. CMP
- 7 LF
- No Defects observed
- Flow: None
- Grade score of: 1

Main Inspections Pipe Run

Project name:	Mainline ID:	City:	Street:
Downtown 5th and 6th	213-60 to 213-57	Anchorage	5th
Start date/time:	Direction:	Weather:	Location code:
10/2/2018 2:22 PM	D		
Shape:	Material:	Height:	Width:
C	CMP	21 in.	

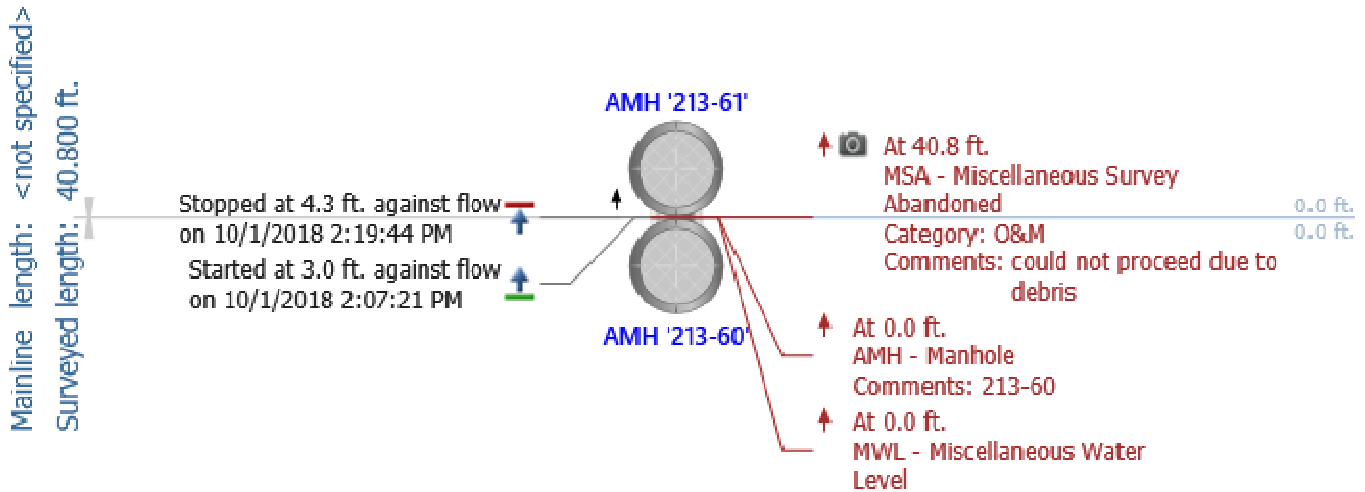


Notes: 213-60 to 213-57

- 21-in. CMP
- 278 LF
- Discoloration in bottom half of pipe
- Evidence of surface corrosion in invert
- 0-1" debris throughout pipe
- Possible bellies upstream of joints
- Flow: 0-1"
- Grade score of: 1

Main Inspections Pipe Run

Project name:	Mainline ID:	City:	Street:
Downtown 5th and 6th	213-61 to 213-60	Anchorage	5th
Start date/time:	Direction:	Weather:	Location code:
10/1/2018 2:07 PM	U		
Shape:	Material:	Height:	Width:
C	CMP	12 in.	

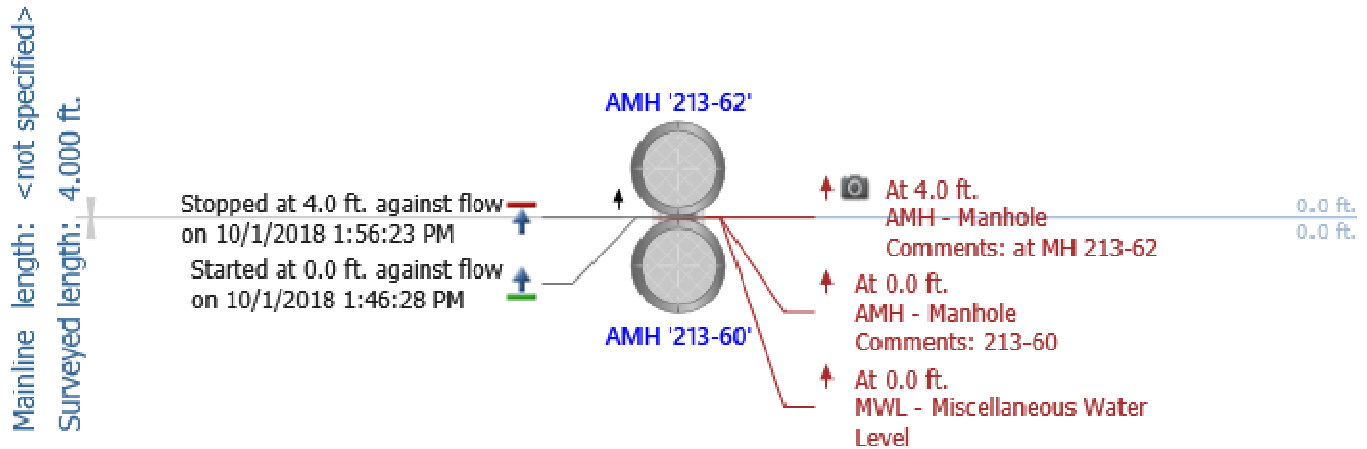


Notes: 213-61 to 213-60

- 12-in. CMP
- 51 LF
- Debris buildup at joint, 20 LF
- Pipe becomes approximately 1/4 full of debris near joint 37 LF, unable to pass
- Debris subsides closer to upstream end
- Flow: None
- Grade score of: 1

Main Inspections Pipe Run

Project name:	Mainline ID:	City:	Street:
Downtown 5th and 6th	213-62 to 213-60	Anchorage	5th
Start date/time:	Direction:	Weather:	Location code:
10/1/2018 1:46 PM	U		
Shape:	Material:	Height:	Width:
C	CMP	12 in.	

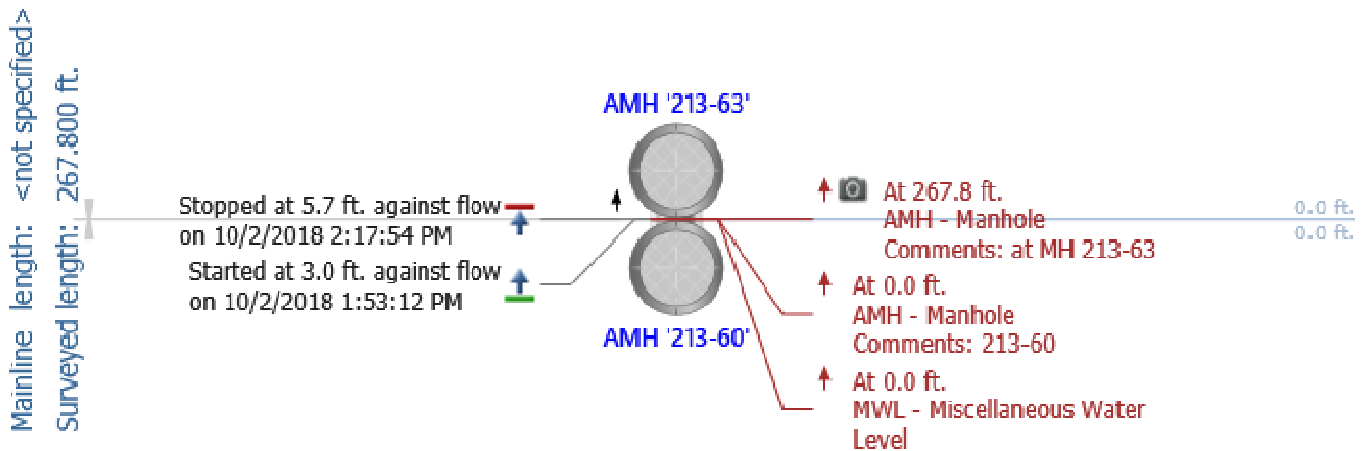


Notes: 213-62 to 213-60

- 12-in. CMP
- 7 LF
- No defects observed
- Flow: None
- Grade score of: 1

Main Inspections Pipe Run

Project name:	Mainline ID:	City:	Street:
Downtown 5th and 6th	213-63 to 213-60	Anchorage	5th
Start date/time:	Direction:	Weather:	Location code:
10/2/2018 1:53 PM	U		
Shape:	Material:	Height:	Width:
C	CMP	18 in.	

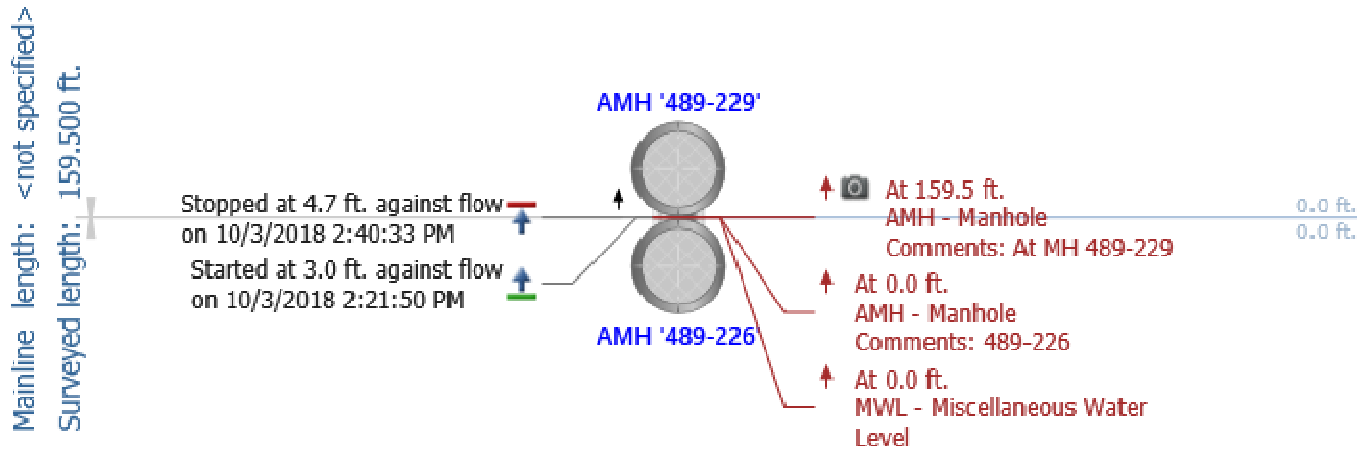


Notes: 213-63 to 213-60

- 18-in. CMP
- 268 LF
- Possible belly in pipe at 20 LF, similar ponding effects ahead of each joint throughout pipe
- 1-2" of debris beginning at 158 LF, decreasing to 0-1" at 171 LF, 1-2" at 228 LF
- No severe defects observed
- Flow: 0-1"
- Grade score of: 1

Main Inspections Pipe Run

Project name:	Mainline ID:	City:	Street:
Downtown 5th and 6th	489-229 to 489-226	Anchorage	6th
Start date/time:	Direction:	Weather:	Location code:
10/3/2018 2:21 PM	U		
Shape:	Material:	Height:	Width:
C	CMP	18 in.	

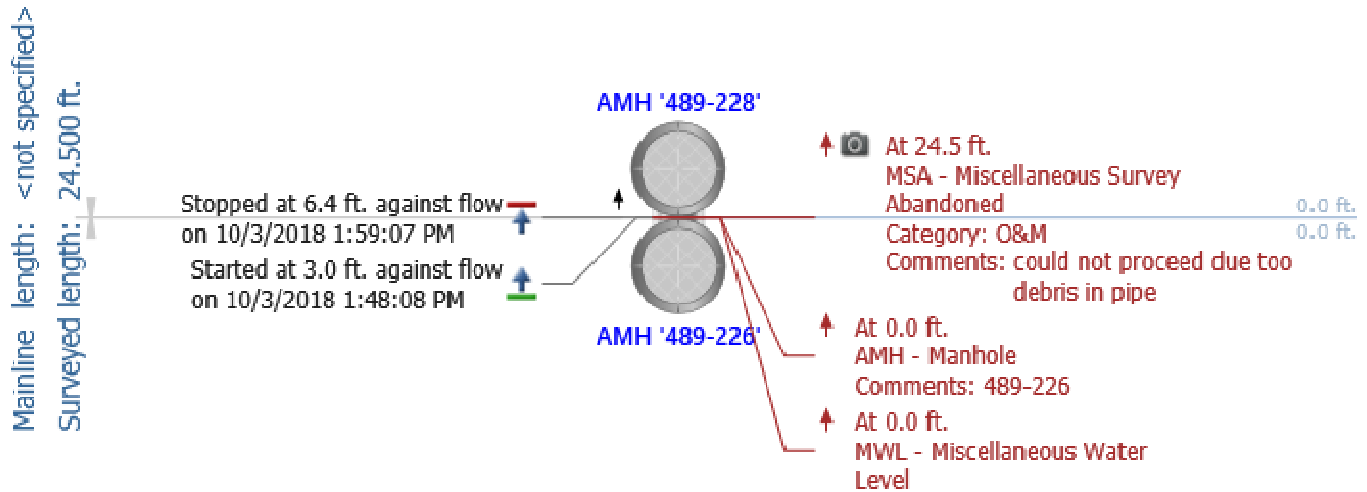


Notes: 489-229 to 489-226

- 18-in. CMP
- 160 LF
- 1-3" of debris from 3 LF to
- No major defects observed
- Flow: None
- Grade score of: 1

Main Inspections Pipe Run

Project name:	Mainline ID:	City:	Street:
Downtown 5th and 6th	489-228 to 489-226	Anchorage	6th
Start date/time:	Direction:	Weather:	Location code:
10/3/2018 1:48 PM	U		
Shape:	Material:	Height:	Width:
C	CMP	12 in.	

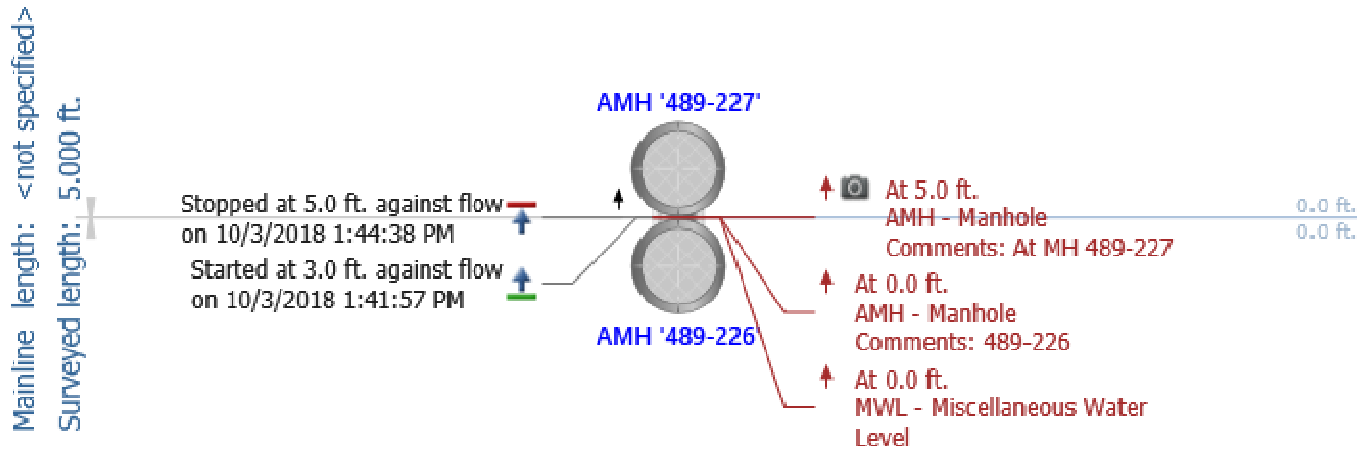


Notes: 489-228 to 489-226

- 12-in. CMP
- 38 LF
- No debris from 3 LF to 20 LF, 2-3" of debris at 20 LF
- Unable to pass debris at 25 LF, able to see end of pipe, no major defects observed
- Flow: None
- Grade score of: 1

Main Inspections Pipe Run

Project name:	Mainline ID:	City:	Street:
Downtown 5th and 6th	489-227 to 489-226	Anchorage	6th
Start date/time:	Direction:	Weather:	Location code:
10/3/2018 1:41 PM	U		
Shape:	Material:	Height:	Width:
C	CMP	12 in.	

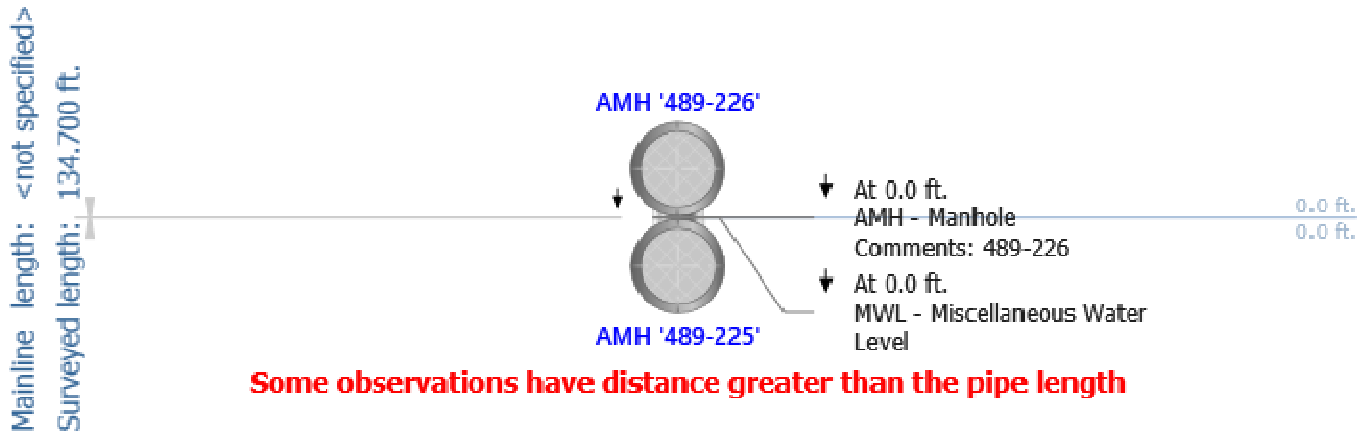


Notes: 489-227 to 489-226

- 12-in. CMP
- 5 LF
- No major defects observed
- Flow: None
- Grade score of: 1

Main Inspections Pipe Run

Project name:	Mainline ID:	City:	Street:
Downtown 5th and 6th	489-226 to 489-225	Anchorage	6th
Start date/time:	Direction:	Weather:	Location code:
10/3/2018 2:43 PM	D		
Shape:	Material:	Height:	Width:
C	CMP	18 in.	

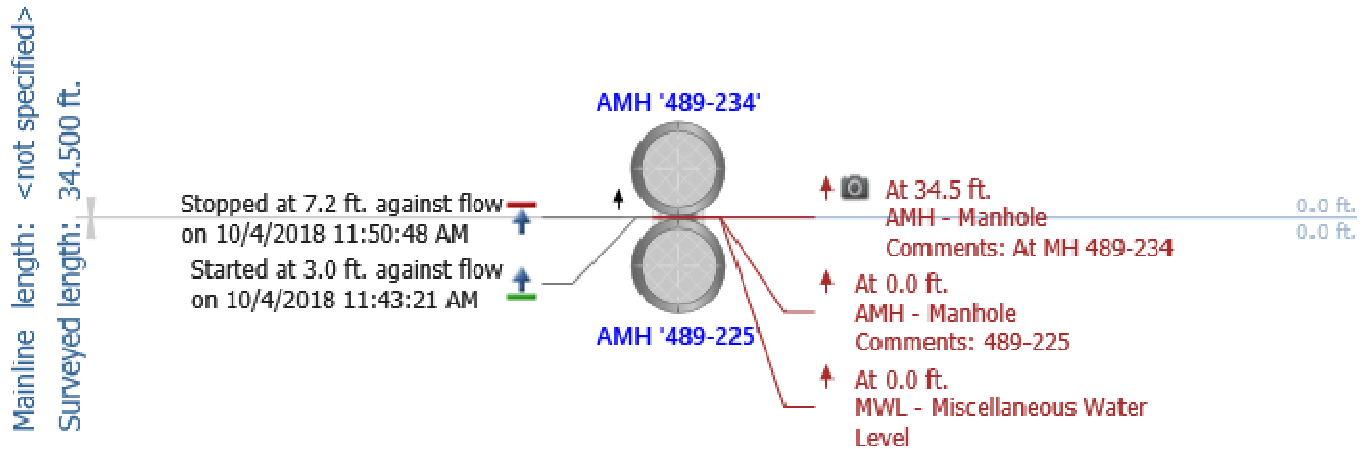


Notes: 489-226 to 489-225

- 18-in. CMP
- 135 LF
- 0-1" of debris 3 LF to 99 LF, 115 LF to end of pipe, 1-2" 99 LF to 115 LF
- No major defects observed in pipe
- Flow: Minimal
- Grade score of: 1

Main Inspections Pipe Run

Project name:	Mainline ID:	City:	Street:
Downtown 5th and 6th	489-234 to 489-225	Anchorage	6th
Start date/time:	Direction:	Weather:	Location code:
10/4/2018 11:43 AM	U		
Shape:	Material:	Height:	Width:
C	CMP	12 in.	

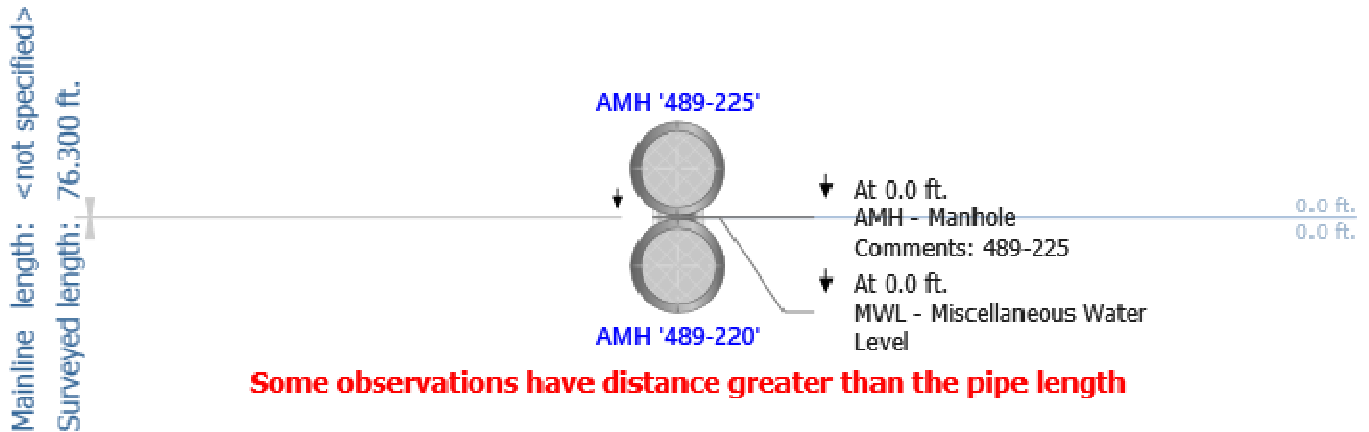


Notes: 489-234 to 489-225

- 12-in. CMP
- 35 LF
- Debris buildup at 24 LF, possible belly in pipe
- No major defects observed
- Flow: None
- Grade score of: 1

Main Inspections Pipe Run

Project name:	Mainline ID:	City:	Street:
Downtown 5th and 6th	489-225 to 489-220	Anchorage	6th
Start date/time:	Direction:	Weather:	Location code:
10/3/2018 3:10 PM	D		
Shape:	Material:	Height:	Width:
C	CMP	18 in.	

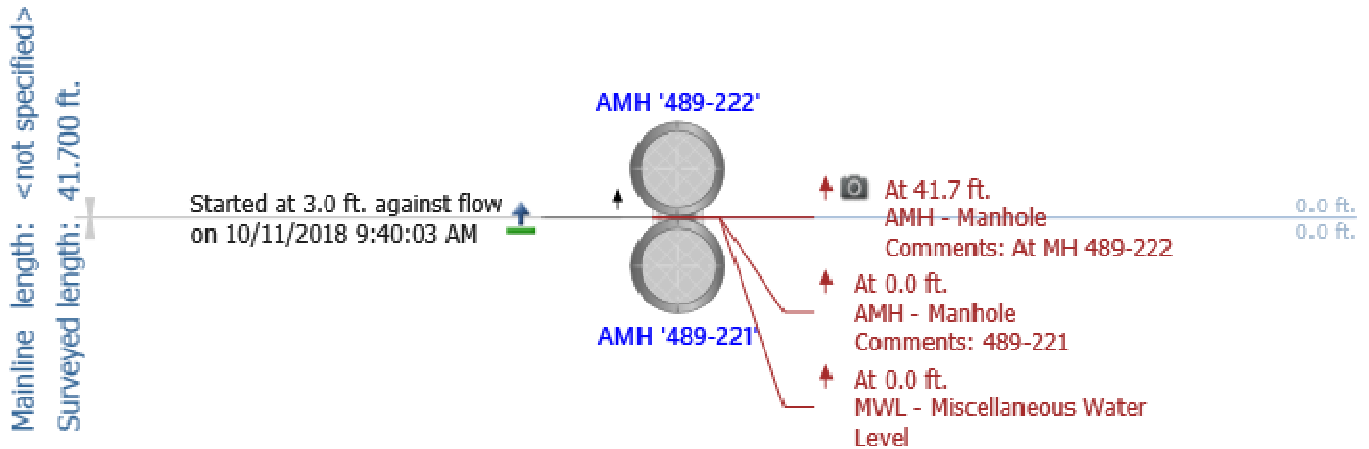


Notes: 489-225 to 489-220

- 18-in. CMP
- 76 LF
- 0-1" debris from 3 LF to end of pipe
- No major defects observed
- Flow: Minimal
- Grade score of: 1

Main Inspections Pipe Run

Project name:	Mainline ID:	City:	Street:
Downtown 5th and 6th	489-222 to 489-221	Anchorage	Hyder
Start date/time:	Direction:	Weather:	Location code:
10/11/2018 9:40 AM	U		
Shape:	Material:	Height:	Width:
C	CMP	12 in.	



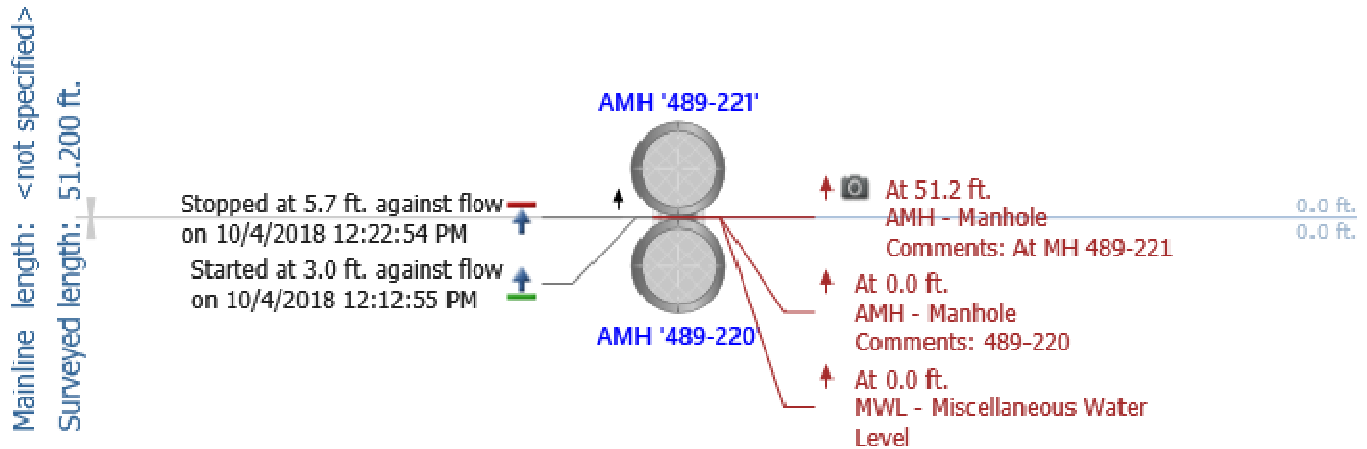
Some observations have distance greater than the pipe length

Notes: 489-222 to 489-221

- 12-in. CMP
- 42 LF
- Minor horizontal deflection/bent corrugations around joint at 20 LF
- Debris increase at 20 LF, approximately 1 inch
- Hole in invert in upstream end protruding in manhole
- Flow: Minimal
- Grade score of: 1

Main Inspections Pipe Run

Project name:	Mainline ID:	City:	Street:
Downtown 5th and 6th	489-221 to 489-220	Anchorage	6th
Start date/time:	Direction:	Weather:	Location code:
10/4/2018 12:12 PM	U		
Shape:	Material:	Height:	Width:
C	CMP	18 in.	

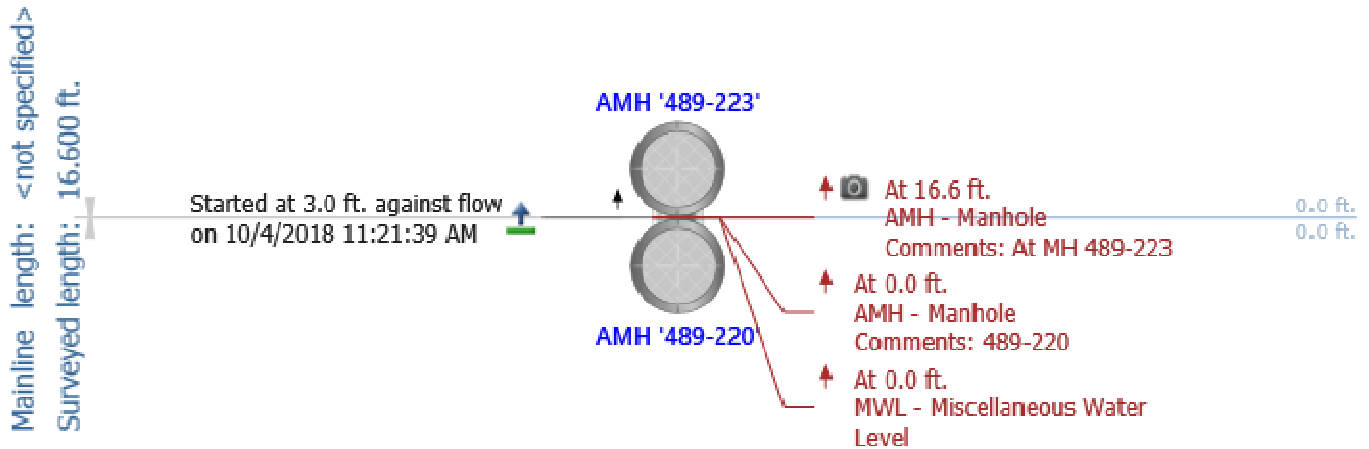


Notes: 489-221 to 489-220

- 18-in. CMP
- 51 LF
- 0-1" debris in pipe
- Bent spigot end, 12:00 position, approximately 1 inch at 40 LF
- Flow: Minimal
- Grade score of: 1

Main Inspections Pipe Run

Project name:	Mainline ID:	City:	Street:
Downtown 5th and 6th	489-223 to 489-220	Anchorage	6th
Start date/time:	Direction:	Weather:	Location code:
10/4/2018 11:21 AM	U		
Shape:	Material:	Height:	Width:
C	CMP	12 in.	



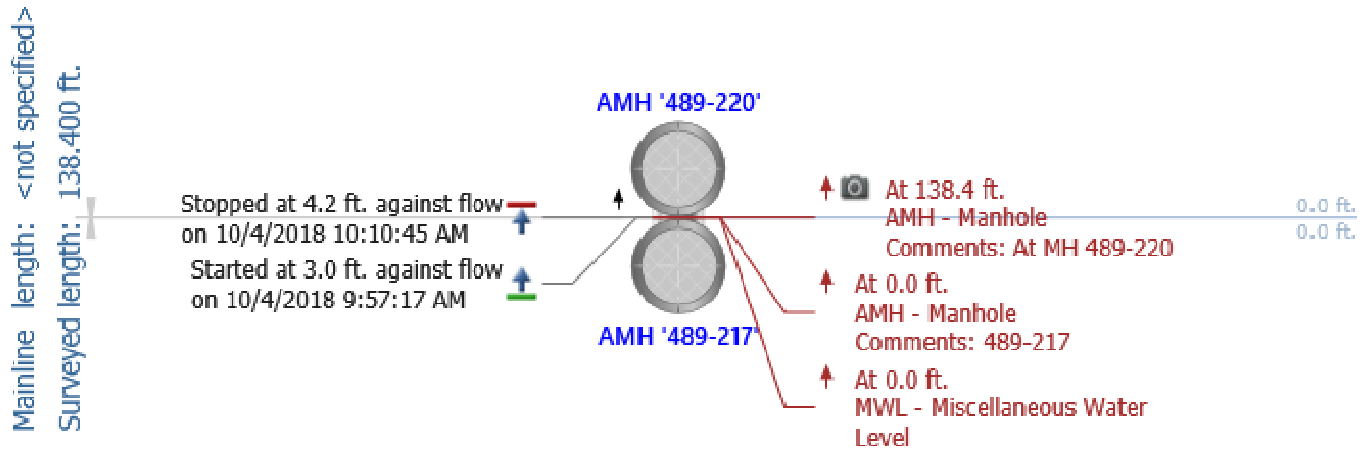
Some observations have distance greater than the pipe length

Notes: 489-223 to 489-220

- 12-in. CMP
- 17 LF
- No major defects observed
- Flow: None
- Grade score of: 1

Main Inspections Pipe Run

Project name:	Mainline ID:	City:	Street:
Downtown 5th and 6th	489-220 to 489-217	Anchorage	6th
Start date/time:	Direction:	Weather:	Location code:
10/4/2018 9:57 AM	U		
Shape:	Material:	Height:	Width:
C	CMP	18 in.	

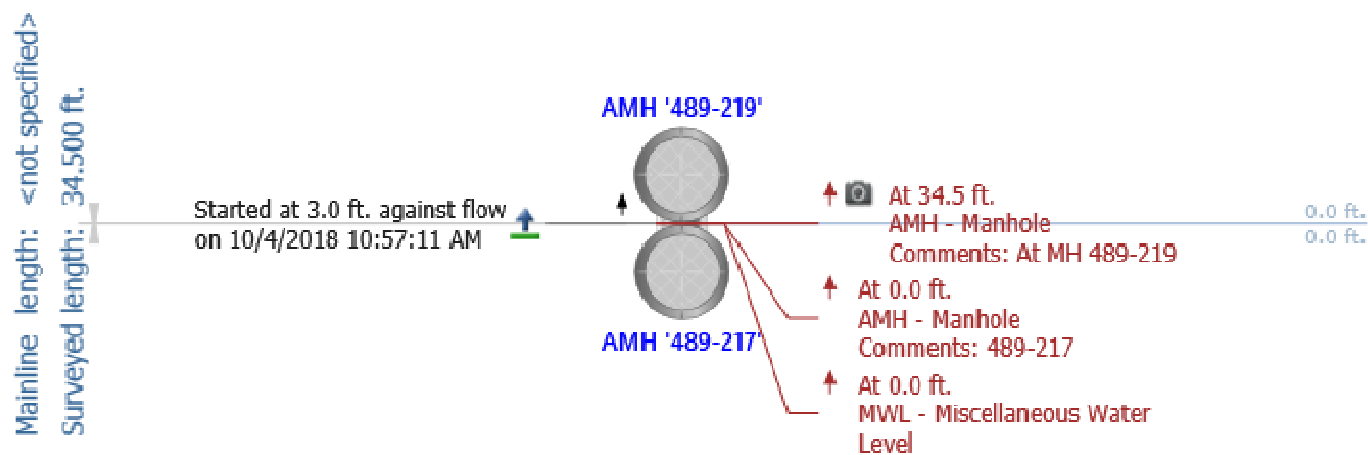


Notes: 489-220 to 489-217

- 18-in. CMP
- 138 LF
- 0-1" of debris in pipe
- Horizontal deflection at joint at 39 LF
- Flow: Minimal
- Grade score of: 1

Main Inspections Pipe Run

Project name:	Mainline ID:	City:	Street:
Downtown 5th and 6th	489-219 to 489-217	Anchorage	6th
Start date/time:	Direction:	Weather:	Location code:
10/4/2018 10:57 AM	U		
Shape:	Material:	Height:	Width:
C	CMP	12 in.	



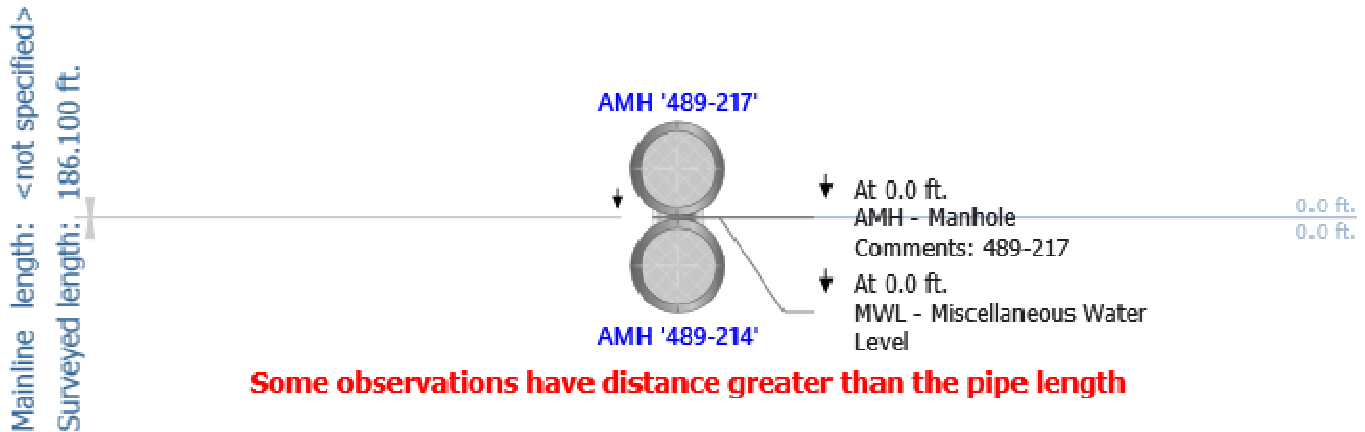
Some observations have distance greater than the pipe length

Notes: 419-219 to 489-217

- 12-in. CMP
- 35 LF
- Horizontal deflection at joint at 20 LF, 1-3"
- Flow: None
- Grade score of: 1

Main Inspections Pipe Run

Project name:	Mainline ID:	City:	Street:
Downtown 5th and 6th	489-217 to 489-214	Anchorage	6th
Start date/time:	Direction:	Weather:	Location code:
10/4/2018 9:38 AM	D		
Shape:	Material:	Height:	Width:
C	CMP	18 in.	

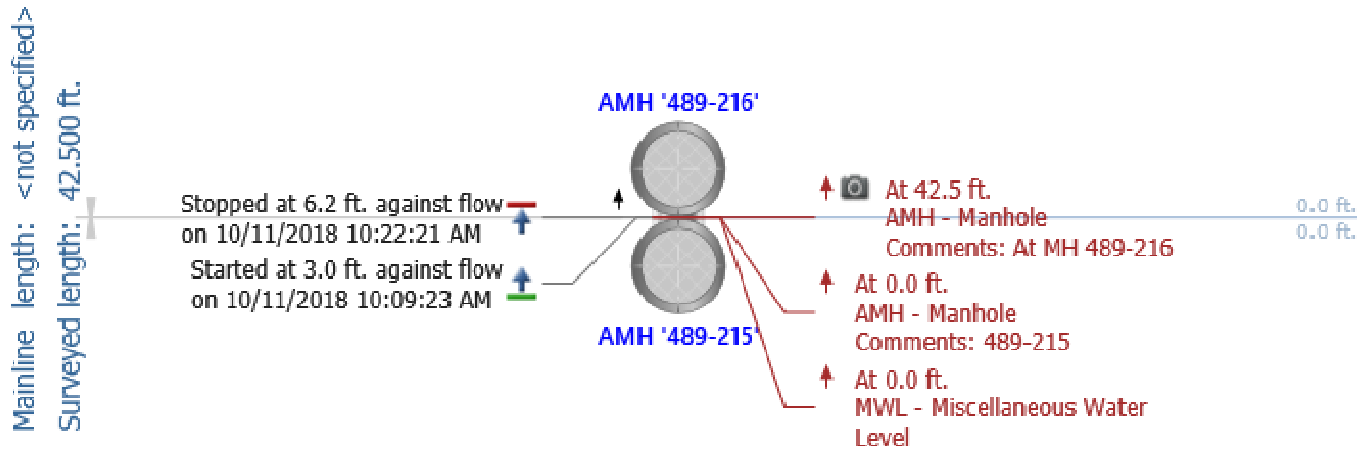


Notes: 489-217 to 489-214

- 18-in. CMP
- 186 LF
- Organic material penetrating joint, 12:00 position at 5 LF
- 0-1" debris in pipe
- Root infiltration at joint at 60 LF, 11:00 position
- Root infiltration at joint, 166 LF
- No major structural defects observed
- Flow: 0-1"
- Grade score of: 2

Main Inspections Pipe Run

Project name:	Mainline ID:	City:	Street:
Downtown 5th and 6th	489-216 to 489-215	Anchorage	Ingra
Start date/time:	Direction:	Weather:	Location code:
10/11/2018 10:09 AM	U		
Shape:	Material:	Height:	Width:
C	CMP	12 in.	

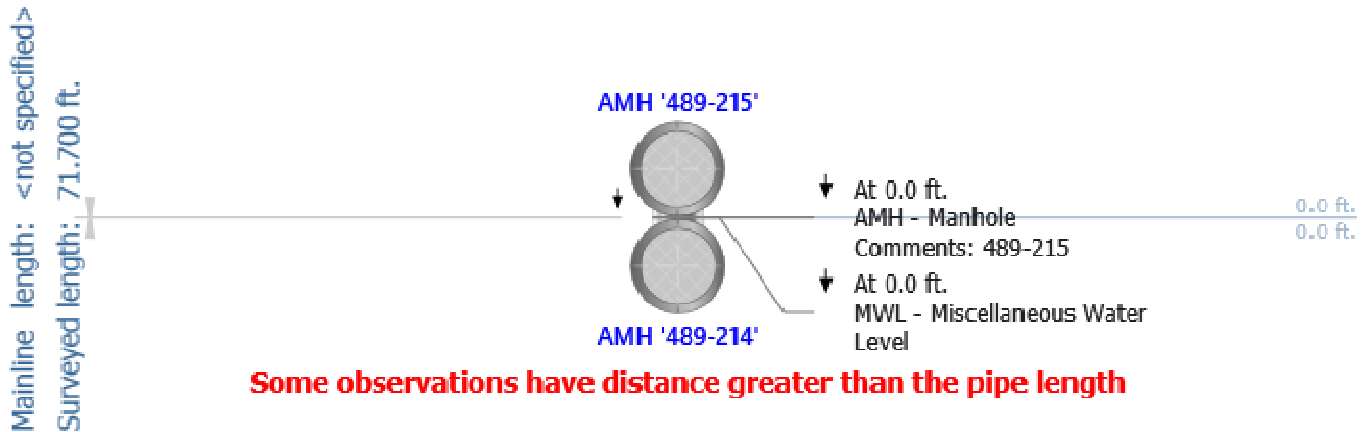


Notes: 489-216 to 489-215

- 12-in. CMP
- 43 LF
- No major defects observed
- Flow: Minimal
- Grade score of: 1

Main Inspections Pipe Run

Project name:	Mainline ID:	City:	Street:
Downtown 5th and 6th	489-215 to 489-214	Anchorage	Ingra
Start date/time:	Direction:	Weather:	Location code:
11/6/2018 9:59 AM	D		
Shape:	Material:	Height:	Width:
C	CMP	18 in.	

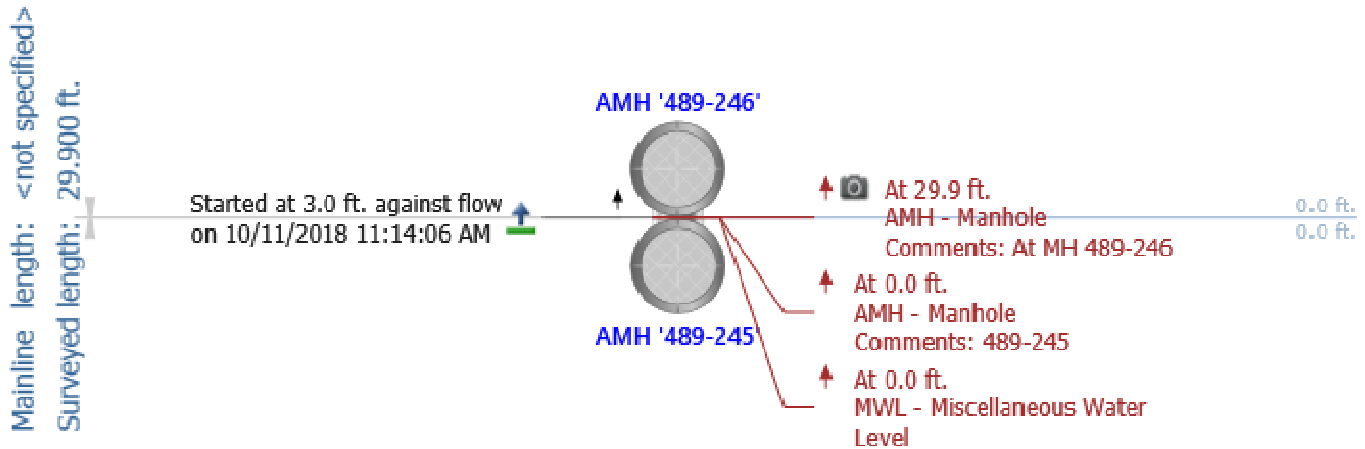


Notes: 489-215 to 489-214

- 18-in. CMP
- 72 LF
- Scattered debris throughout pipe, 0-2"
- Possible corrosion in invert, unable to confirm due to poor CCTV footage and invert view obscured by debris in some spots
- Discoloration in 5:00 and 7:00 position, 54 LF, viewed in rear camera during pullback
- Flow: None
- Grade score of: 1

Main Inspections Pipe Run

Project name:	Mainline ID:	City:	Street:
Downtown 5th and 6th	489-246 to 489-245	Anchorage	Juneau
Start date/time:	Direction:	Weather:	Location code:
10/11/2018 11:14 AM	U		
Shape:	Material:	Height:	Width:
C	PE	12 in.	



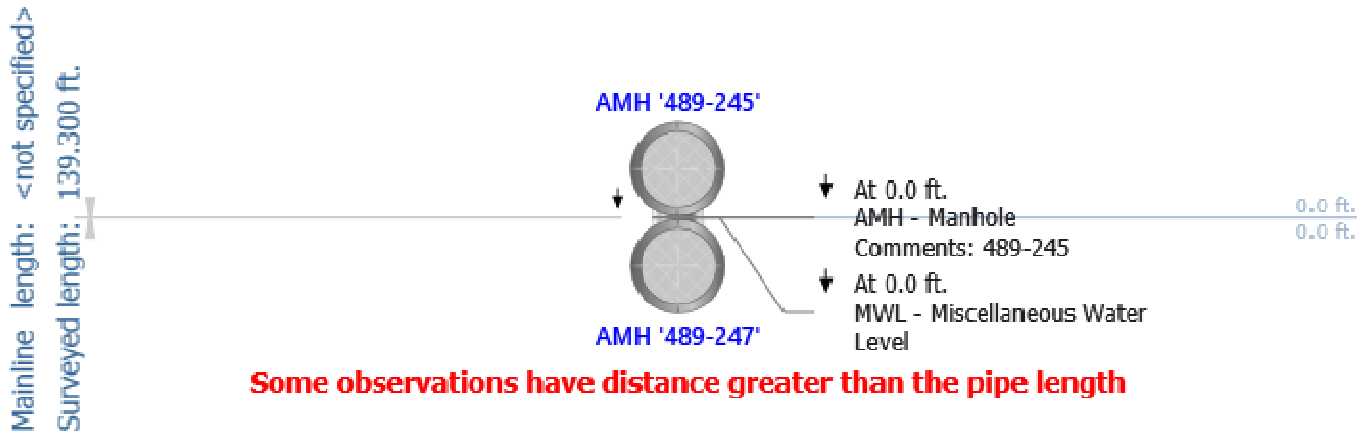
Some observations have distance greater than the pipe length

Notes: 489-246 to 489-245

- 12-in. CPEP
- 30 LF
- 2" of debris buildup at downstream end, 0-1" debris from approximately 4 LF to 8 LF
- No major structural defects observed
- Flow: 0-1"
- Grade score of: 1

Main Inspections Pipe Run

Project name:	Mainline ID:	City:	Street:
Downtown 5th and 6th	489-245 to 489-242	Anchorage	Juneau
Start date/time:	Direction:	Weather:	Location code:
10/11/2018 10:47 AM	D		
Shape:	Material:	Height:	Width:
C	PE	12 in.	

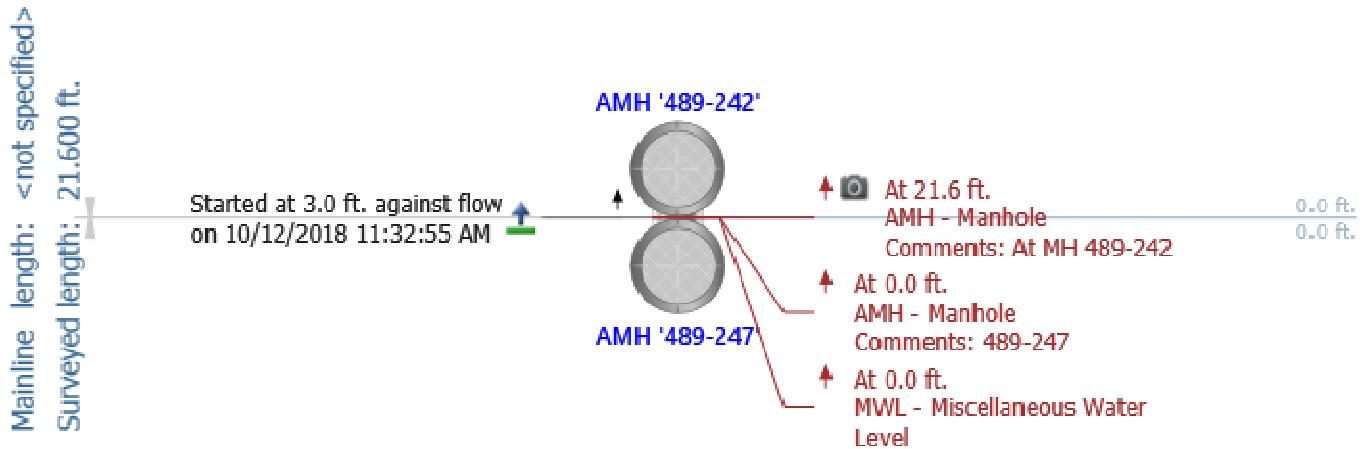


Notes: 489-245 to 489-242

- 12-in. CPEP
- 139 LF
- Debris buildup at 73 LF, flow buildup upstream
- No major defects in pipe
- Flow: 0-1"
- Grade score of: 1

Main Inspections Pipe Run

Project name:	Mainline ID:	City:	Street:
Downtown 5th and 6th	489-247 to 489-242	Anchorage	6th
Start date/time:	Direction:	Weather:	Location code:
10/12/2018 11:32 AM	U		
Shape:	Material:	Height:	Width:
C	CMP	12 in.	



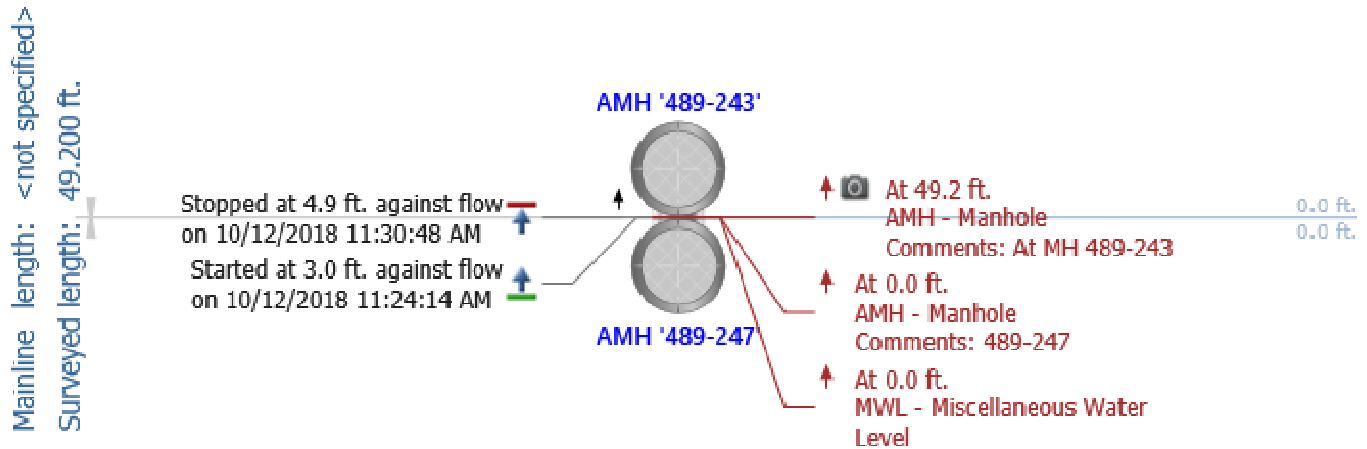
Some observations have distance greater than the pipe length

Notes: 489-247 to 489-242

- 12-in. CMP
- 22 LF
- Minimal debris in pipe
- Surface discoloration in invert, visible at joint 19 LF
- No major defects observed
- Flow: Minimal
- Grade score of: 1

Main Inspections Pipe Run

Project name:	Mainline ID:	City:	Street:
Downtown 5th and 6th	489-243 to 489-242	Anchorage	6th
Start date/time:	Direction:	Weather:	Location code:
10/12/2018 11:24 AM	U		
Shape:	Material:	Height:	Width:
C	CMP	12 in.	

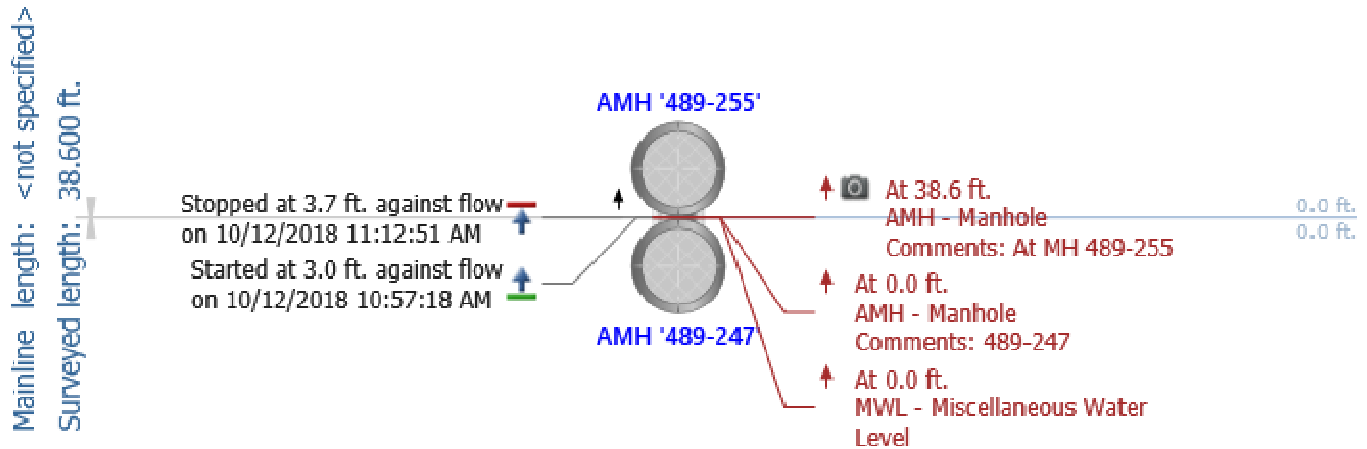


Notes: 489-243 to 489-242

- 12-in. CMP
- 49 LF
- Debris buildup, 1-2" at 29 LF
- 1" debris at upstream end
- No major structural defects
- Flow: Minimal
- Grade score of: 1

Main Inspections Pipe Run

Project name:	Mainline ID:	City:	Street:
Downtown 5th and 6th	489-255 to 489-242	Anchorage	6th
Start date/time:	Direction:	Weather:	Location code:
10/12/2018 10:57 AM	U		
Shape:	Material:	Height:	Width:
C	CMP	12 in.	

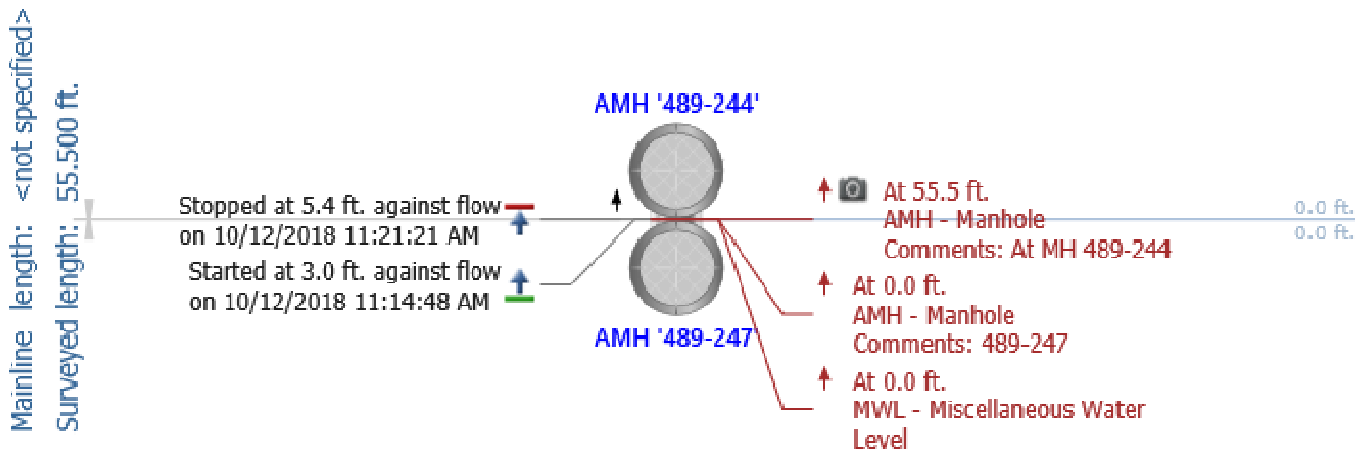


Notes: 489-255 to 489-242

- 12-in. CMP
- 39 LF
- No major defects observed
- Flow: Minimal
- Grade score of: 1

Main Inspections Pipe Run

Project name:	Mainline ID:	City:	Street:
Downtown 5th and 6th	489-244 to 489-242	Anchorage	6th
Start date/time:	Direction:	Weather:	Location code:
10/12/2018 11:14 AM	U		
Shape:	Material:	Height:	Width:
C	CMP	12 in.	

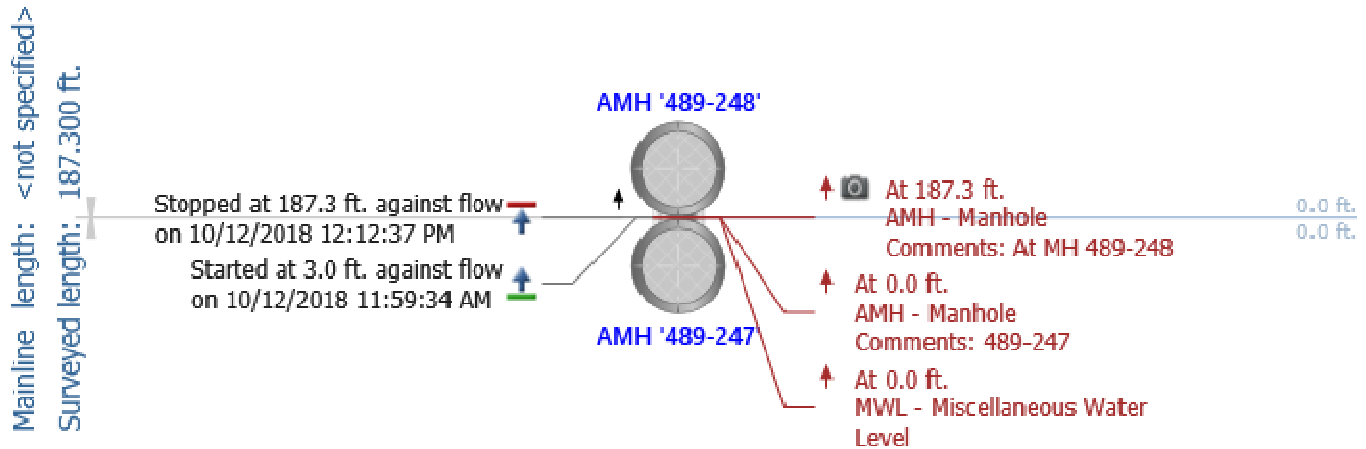


Notes: 489-244 to 489-242

- 12-in. CMP
- 56 LF
- Debris buildup at 29 LF, 4-5"
- 2" debris at upstream end
- No major defects
- Flow: Minimal
- Grade score of: 1

Main Inspections Pipe Run

Project name:	Mainline ID:	City:	Street:
Downtown 5th and 6th	489-248 to 489-242	Anchorage	6th
Start date/time:	Direction:	Weather:	Location code:
10/12/2018 11:59 AM	U		
Shape:	Material:	Height:	Width:
C	CMP	18 in.	

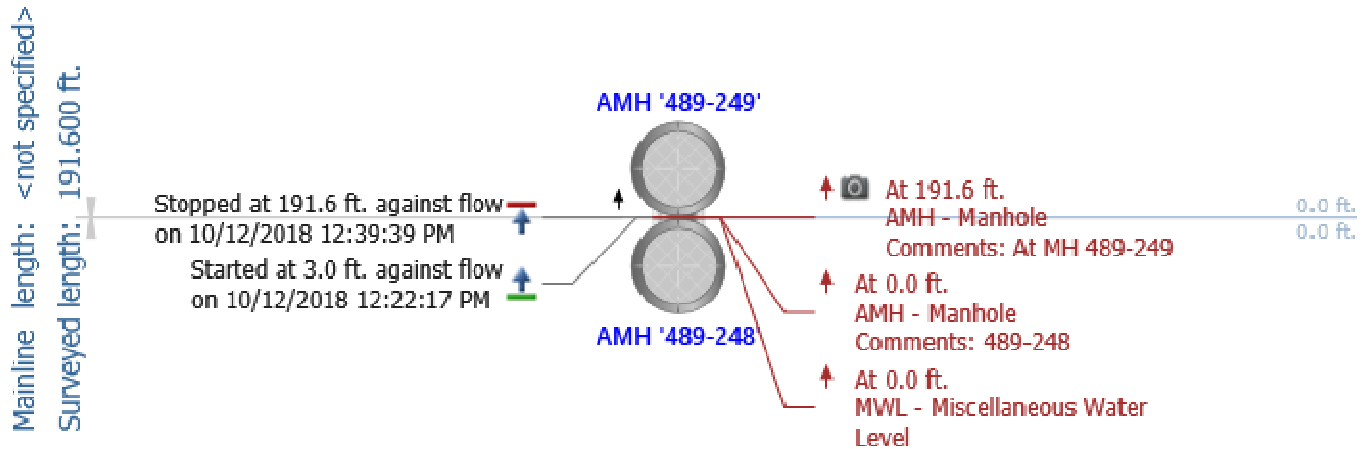


Notes: 489-248 to 489-242

- 18-in. CMP
- 187 LF
- 1-2" of debris 3 LF to 12 LF, minimal debris from 12 LF to end
- Discoloration visible in invert, 17 LF and at other joints
- Debris at joint, 1:00 position at 98 LF
- Discoloration at spring line, 98 LF to end of survey
- No major defects
- Flow: Minimal
- Grade score of: 2

Main Inspections Pipe Run

Project name:	Mainline ID:	City:	Street:
Downtown 5th and 6th	489-249 to 489-248	Anchorage	6th
Start date/time:	Direction:	Weather:	Location code:
10/12/2018 12:22 PM	U		
Shape:	Material:	Height:	Width:
C	CMP	18 in.	

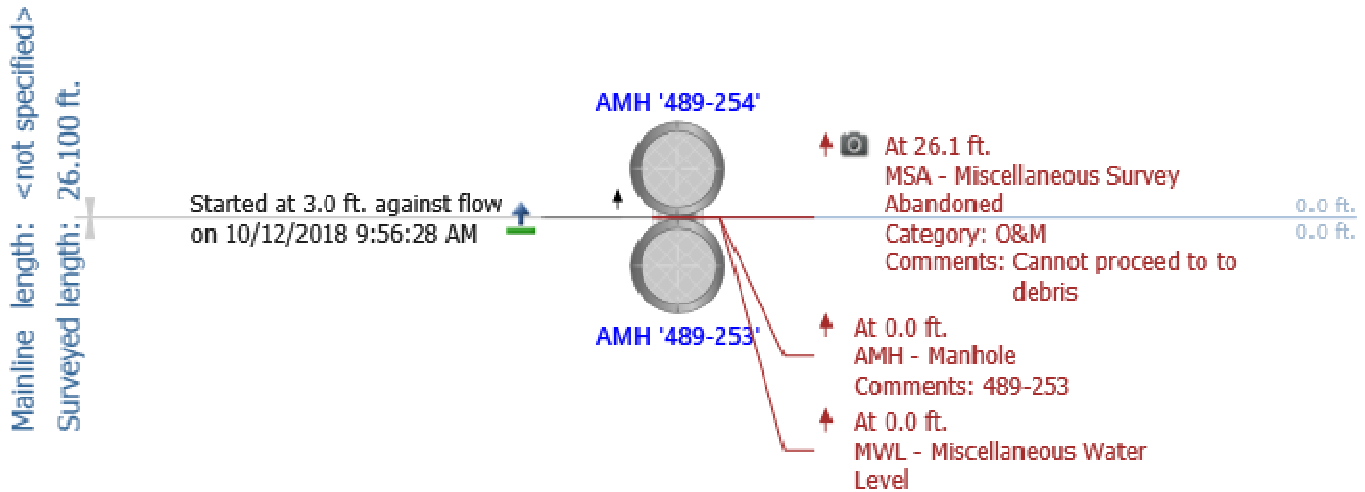


Notes: 489-249 to 489-248

- 18-in. CMP
- 192 LF
- Discoloration between 4:00 and 8:00 position, 3 LF to
- 0-2" of debris in pipe
- Discoloration in invert, visible at 20 LF, 40 LF, and at other joints, also visible at 137 LF
- Service tap at 11:00 position, 30 LF (camera did not stop to view)
- Flow: Minimal
- Grade score of: 2

Main Inspections Pipe Run

Project name:	Mainline ID:	City:	Street:
Downtown 5th and 6th	489-254 to 489-253	Anchorage	Karluk
Start date/time:	Direction:	Weather:	Location code:
10/12/2018 9:56 AM	U		
Shape:	Material:	Height:	Width:
C	CMP	12 in.	



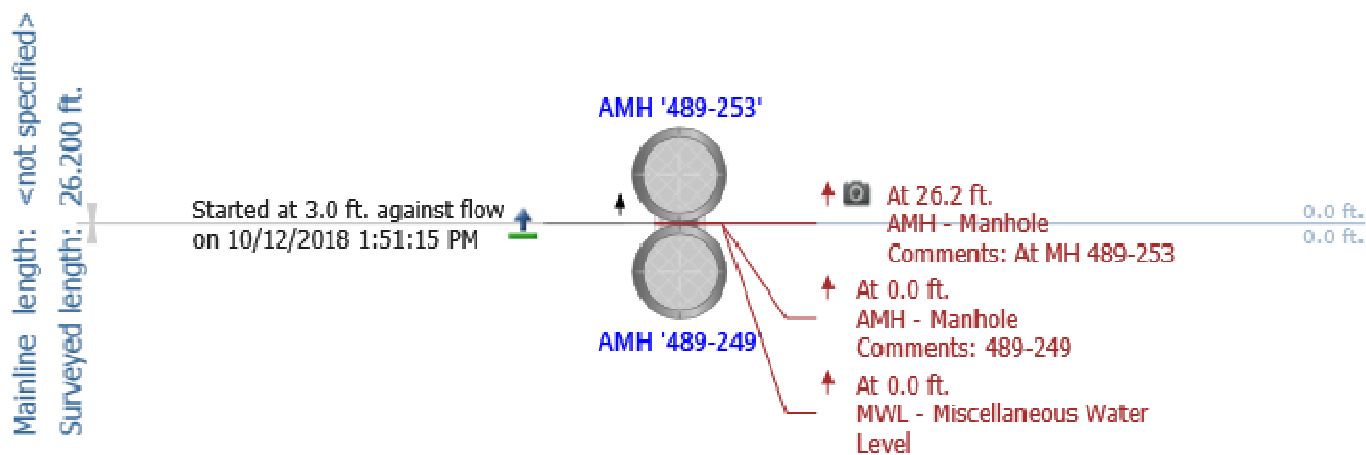
Some observations have distance greater than the pipe length

Notes: 489-254 to 489-253

- 12-in. CMP
- 40 LF
- Inspection stopped by debris plug, 11-12 in. at 27 LF, unable to determine if flow is compromised.
- Clean pipe to evaluate remaining footage
- Flow: Minimal
- Grade score of: 2

Main Inspections Pipe Run

Project name:	Mainline ID:	City:	Street:
Downtown 5th and 6th	489-253 to 489-249	Anchorage	6th
Start date/time:	Direction:	Weather:	Location code:
10/12/2018 1:51 PM	U		
Shape:	Material:	Height:	Width:
C	CMP	18 in.	



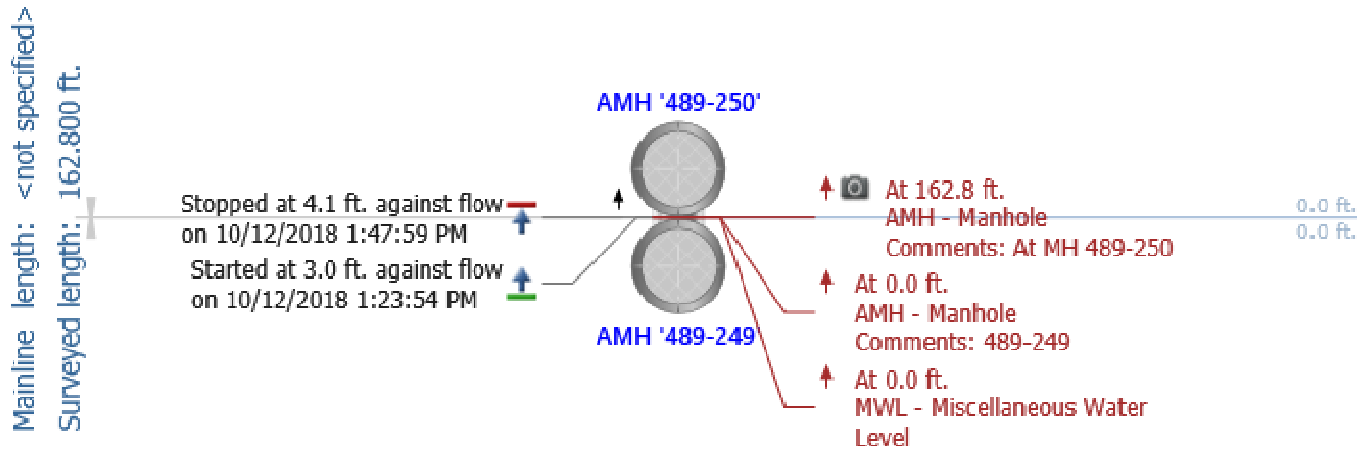
Some observations have distance greater than the pipe length

Notes: 489-253 to 489-249

- 18-in. CMP
- 26 LF
- Minimal debris
- No major defects observed
- Flow: Minimal
- Grade score of: 1

Main Inspections Pipe Run

Project name:	Mainline ID:	City:	Street:
Downtown 5th and 6th	489-250 to 489-249	Anchorage	6th
Start date/time:	Direction:	Weather:	Location code:
10/12/2018 1:23 PM	U		
Shape:	Material:	Height:	Width:
C	CMP	18 in.	

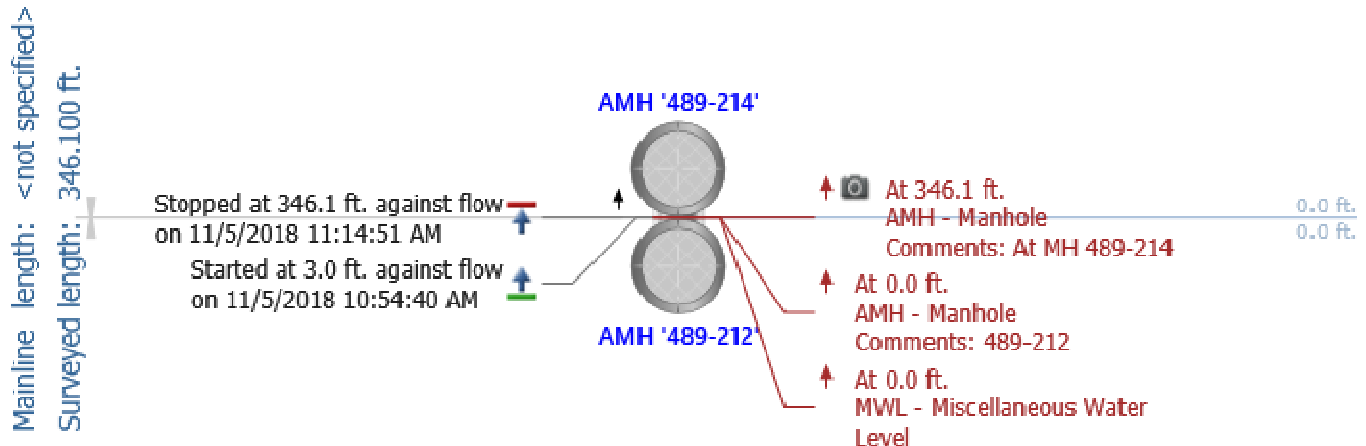


Notes: 489-250 to 489-249

- 18-in. CMP
- 163 LF
- 0-1" of debris in pipe
- Visible surface corrosion in invert, 40 LF
- No major defects observed
- Flow: Minimal
- Grade score of: 1

Main Inspections Pipe Run

Project name:	Mainline ID:	City:	Street:
Downtown/Ingra	489-214 to 489-212	Anchorage	Ingra
Start date/time:	Direction:	Weather:	Location code:
11/5/2018 10:54 AM	U		
Shape:	Material:	Height:	Width:
C	CMP	18 in.	

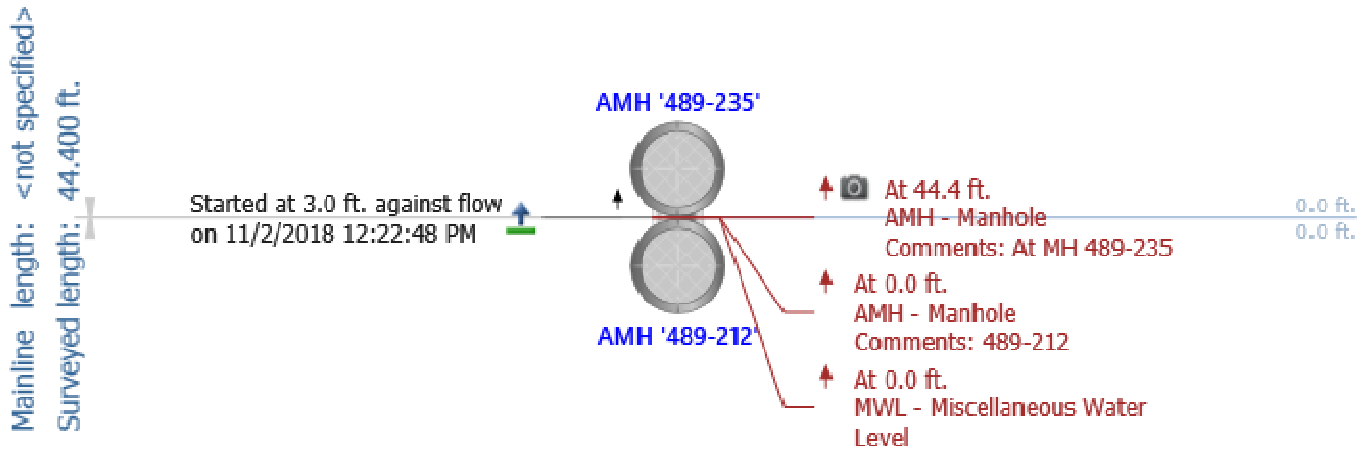


Notes: 489-214 to 489-212

- 18-in. CMP
- 346 LF
- Discoloration visible in invert when not obscured by debris
- 0-2" debris throughout pipe
- 1" deformation 12:00 position, 44 LF
- 0-1" of water in pipe, 200 LF to approximately 230 LF, 250 LF to 290 LF
- Root infiltration at 230 LF, 275 LF, 283 LF, 12:00 position
- Discoloration visible at spring line 295 LF through end of pipe.
- Small horizontal deflection, 1-3" at 340 LF
- Flow: Minimal
- Grade score of: 2

Main Inspections Pipe Run

Project name:	Mainline ID:	City:	Street:
Downtown/Ingra	489-235 to 489-212	Anchorage	Ingra
Start date/time:	Direction:	Weather:	Location code:
11/2/2018 12:22 PM	U		
Shape:	Material:	Height:	Width:
C	CMP	12 in.	



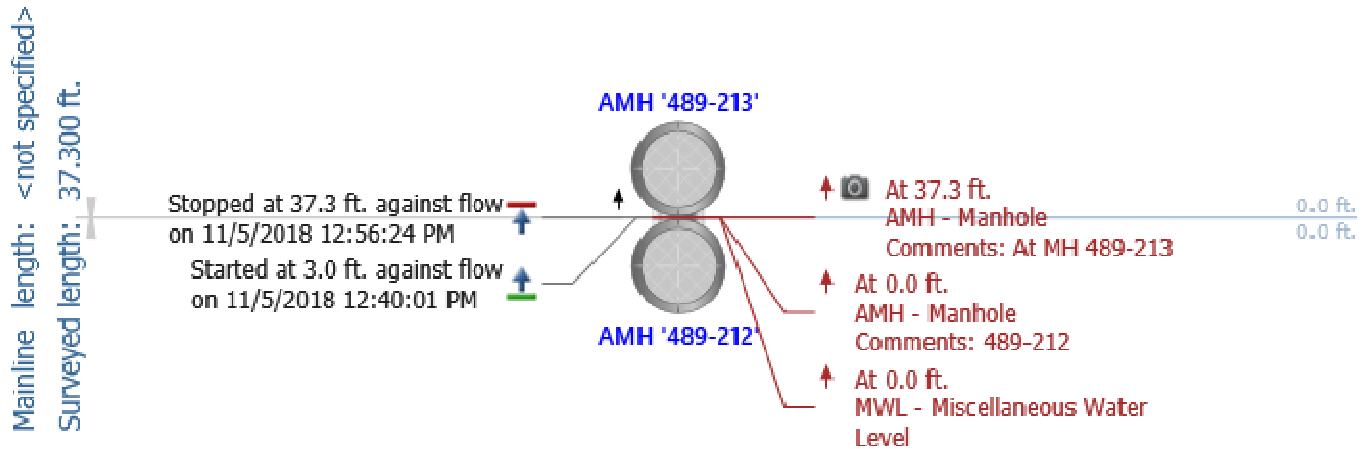
Some observations have distance greater than the pipe length

Notes: 489-235 to 489-212

- 12-in. CMP
- 44 LF
- Surface corrosion/discoloration visible in 5:00 and 7:00 position, 3 LF to
- Minimal debris throughout pipe
- Horizontal deflection approximately, 4-6" to the left (upstream direction), at approximately 42 LF
- Debris in upstream end of pipe, 1-2"
- Flow: None
- Grade score of: 2

Main Inspections Pipe Run

Project name:	Mainline ID:	City:	Street:
Downtown/Ingra	489-213 to 489-212	Anchorage	Ingra
Start date/time:	Direction:	Weather:	Location code:
11/5/2018 12:40 PM	U		
Shape:	Material:	Height:	Width:
C	CMP	12 in.	

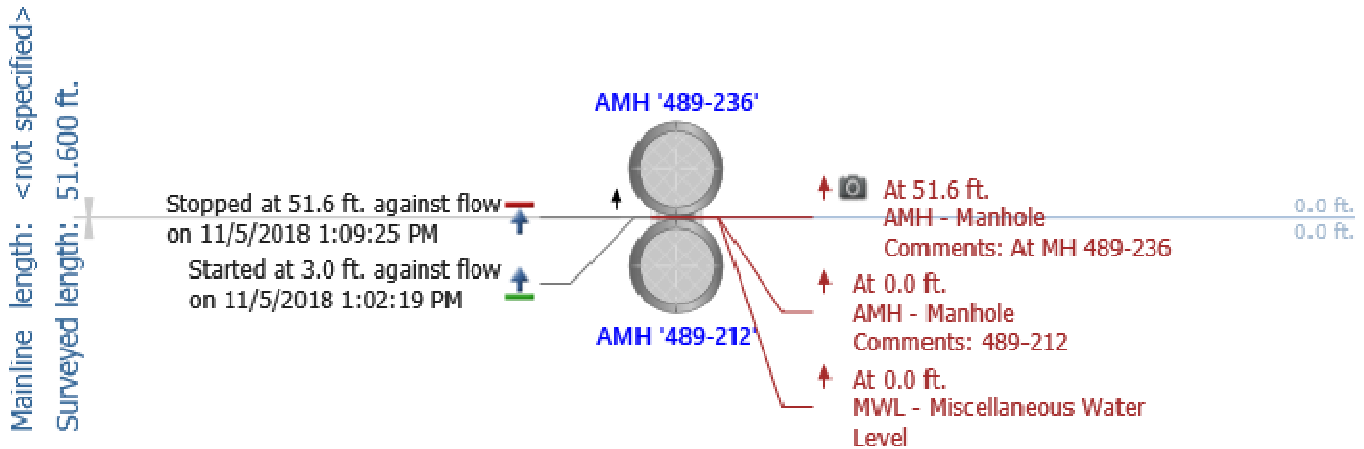


Notes: 489-213 to 489-212

- 12-in. CMP
- 37 LF
- Surface Corrosion/Discoloration in invert, visible at 3 LF and at joints, assumed to be throughout pipe
- Horizontal deflection to right (upstream) at 32 LF, left at 35 LF
- Corrosion at joint, 35 LF
- Survey concluded approximately 2 LF from end of pipe
- Flow: None
- Grade score of: 2

Main Inspections Pipe Run

Project name: Downtown/Ingra	Mainline ID: 489-236 to 489-212	City: Anchorage	Street: Ingra
Start date/time: 11/5/2018 1:02 PM	Direction: U	Weather:	Location code:
Shape: C	Material: CMP	Height: 12 in.	Width:

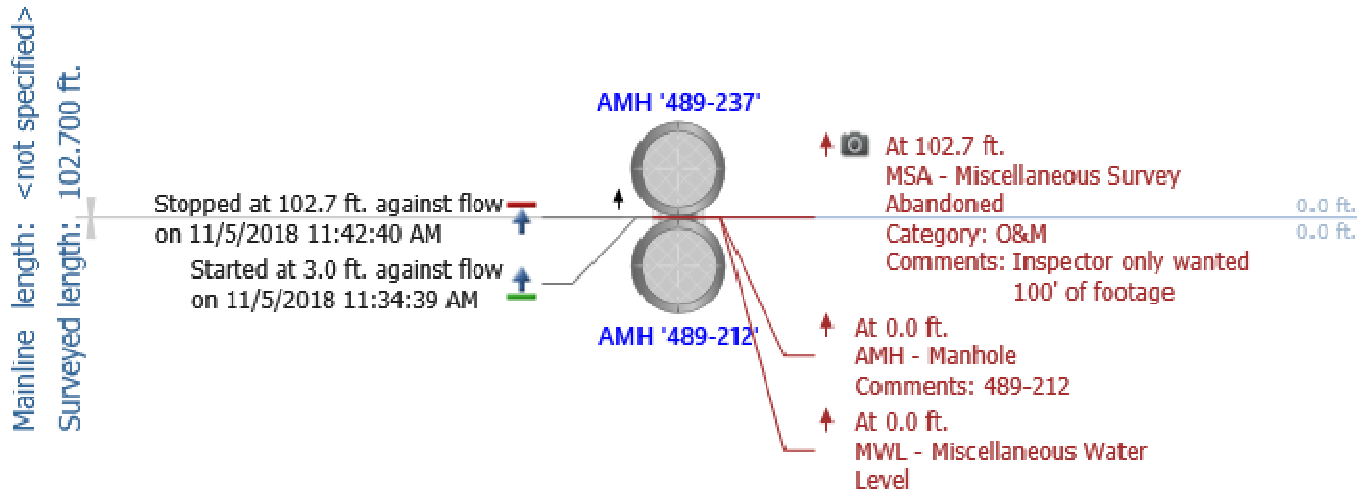


Notes: 489-236 to 489-212

- 12-in. CMP
- 52 LF
- Minor surface corrosion, 5:00 to 7:00 position, 3 LF to end of pipe
- Root infiltration, 34 LF, in 10:00 position
- Unknown debris buildup (appears to be grout) in upstream end
- Flow: None
- Grade score of: 2

Main Inspections Pipe Run

Project name:	Mainline ID:	City:	Street:
Downtown/Ingra	489-237 to 489-212	Anchorage	Ingra
Start date/time:	Direction:	Weather:	Location code:
11/5/2018 11:34 AM	U		
Shape:	Material:	Height:	Width:
C	CP	24 in.	

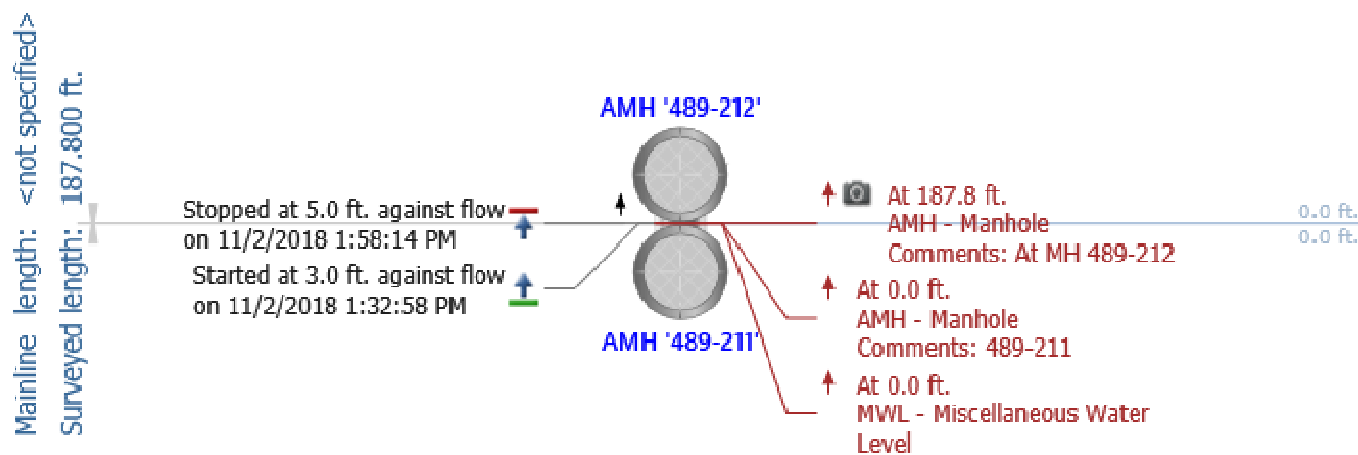


Notes: 489-237 to 489-212

- 24-in. RCP
- 293 LF
- Survey of pipe done to view condition below roadway
- 1-2" debris in pipe, no debris at 3 LF, 10 LF, 45 LF, 93 LF
- Some flow at 93 LF, 0-1"
- Flow: None
- Grade score of: 1

Main Inspections Pipe Run

Project name: Downtown/Ingra	Mainline ID: 489-212 to 489-211	City: Anchorage	Street: Ingra
Start date/time: 11/2/2018 1:32 PM	Direction: U	Weather:	Location code:
Shape: C	Material: CP	Height: 24 in.	Width:

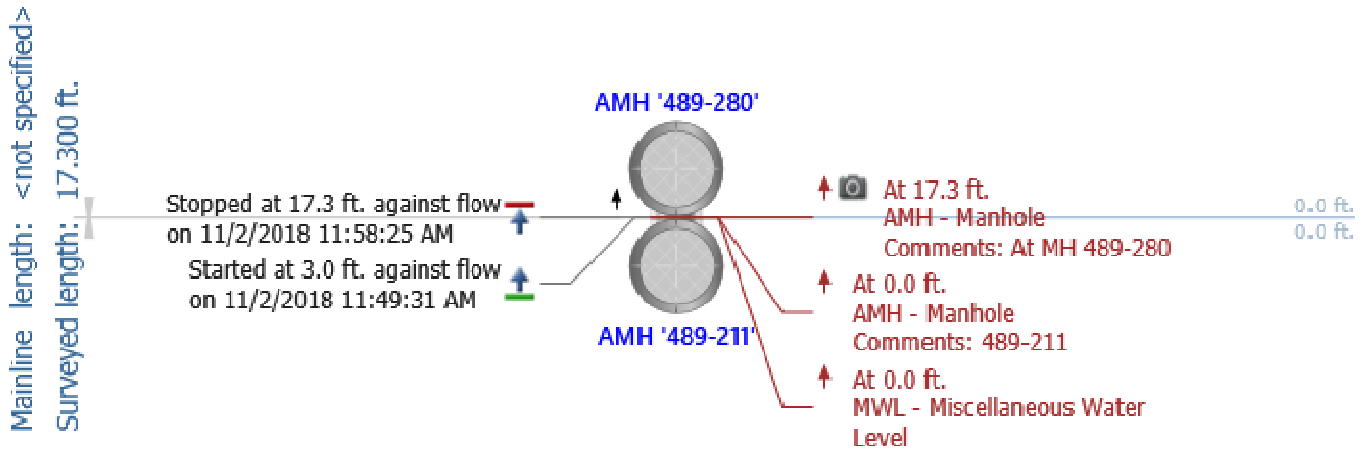


Notes: 489-212 to 489-211

- 24-in. RCP
- 188 LF
- Possible bellies at upstream and downstream end
- Bored pipe at 16 LF, top of pipe, soil visible, pipe broken
- Scattered organics in roof of pipe throughout
- Longitudinal crack, 12:00 position at 72 LF
- Flow: Minimal
- Grade score of: 3

Main Inspections Pipe Run

Project name:	Mainline ID:	City:	Street:
Downtown/Ingra	489-280 to 489-211	Anchorage	Ingra
Start date/time:	Direction:	Weather:	Location code:
11/2/2018 11:49 AM	U		
Shape:	Material:	Height:	Width:
C	CMP	12 in.	

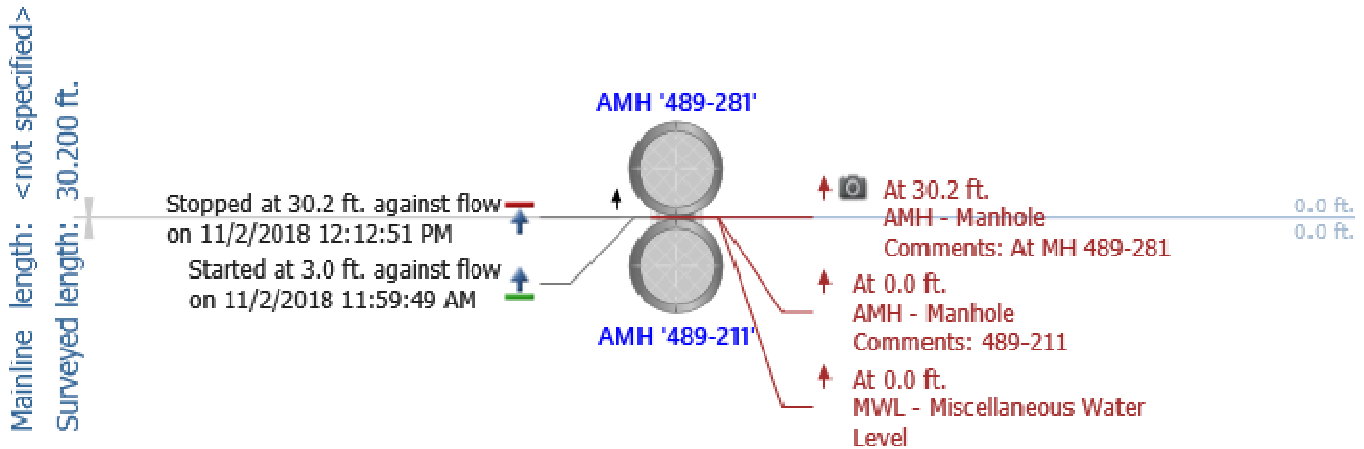


Notes: 489-280 to 489-211

- 12-in. CMP
- 17 LF
- 0-1" of debris at downstream end (beginning of survey)
- Discoloration in 4:00 position and 8:00 position, 3 LF to approx. 5 LF
- Unknown debris buildup (appears to be grout) in upstream end
- Flow: None
- Grade score of: 1

Main Inspections Pipe Run

Project name: Downtown/Ingra	Mainline ID: 489-281 to 489-211	City: Anchorage	Street: Ingra
Start date/time: 11/2/2018 11:59 AM	Direction: U	Weather:	Location code:
Shape: C	Material: CMP	Height: 12 in.	Width:

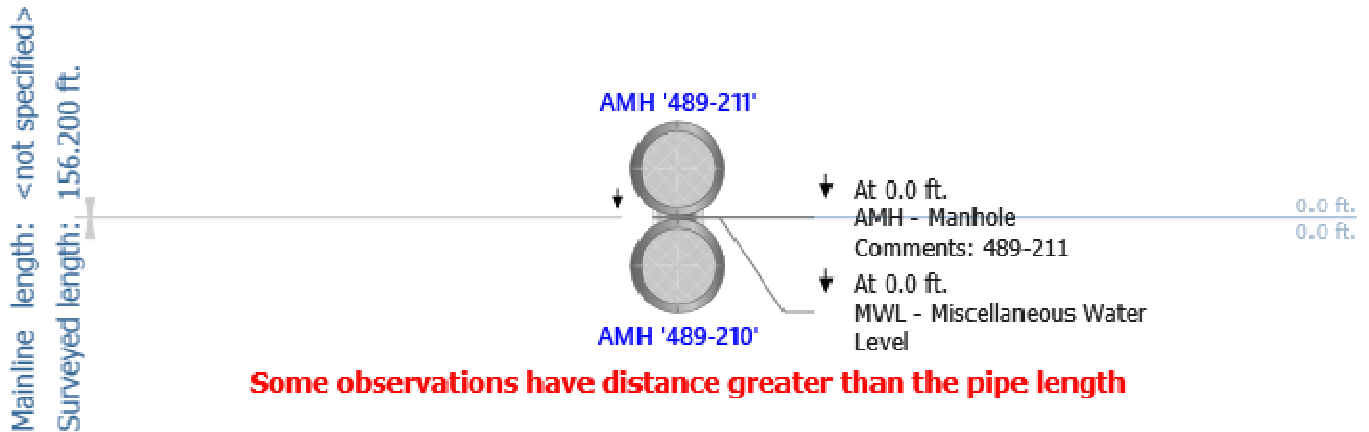


Notes: 489-281 to 489-211

- 12-in. CMP
- 30 LF
- Minor surface corrosion, 5:00 to 7:00 position, 5 LF to end of pipe
- Surface corrosion 2:00 position, 14 LF to 20 LF
- Debris buildup at joint at 20 LF
- Unknown debris buildup (appears to be grout) in upstream end of pipe
- Flow: None
- Grade score of: 2

Main Inspections Pipe Run

Project name:	Mainline ID:	City:	Street:
Downtown/Ingra	489-211 to 489-210	Anchorage	Ingra
Start date/time:	Direction:	Weather:	Location code:
11/2/2018 1:59 PM	D		
Shape:	Material:	Height:	Width:
C	CP	24 in.	

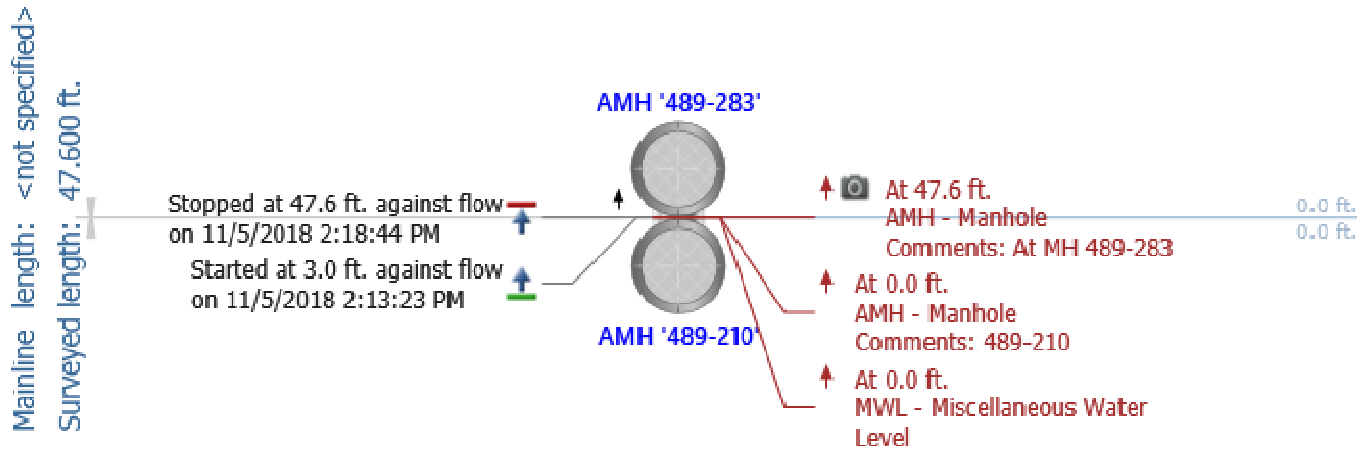


Notes: 489-211 to 489-210

- 24-in. CMP
- 156 LF
- Minimal debris
- Discoloration in invert
- Scattered organics in roof of pipe throughout pipe
- Flow: None
- Grade score of: 1

Main Inspections Pipe Run

Project name:	Mainline ID:	City:	Street:
Downtown/Ingra	489-283 to 489-210	Anchorage	Ingra
Start date/time:	Direction:	Weather:	Location code:
11/5/2018 2:13 PM	U		
Shape:	Material:	Height:	Width:
C	CMP	12 in.	

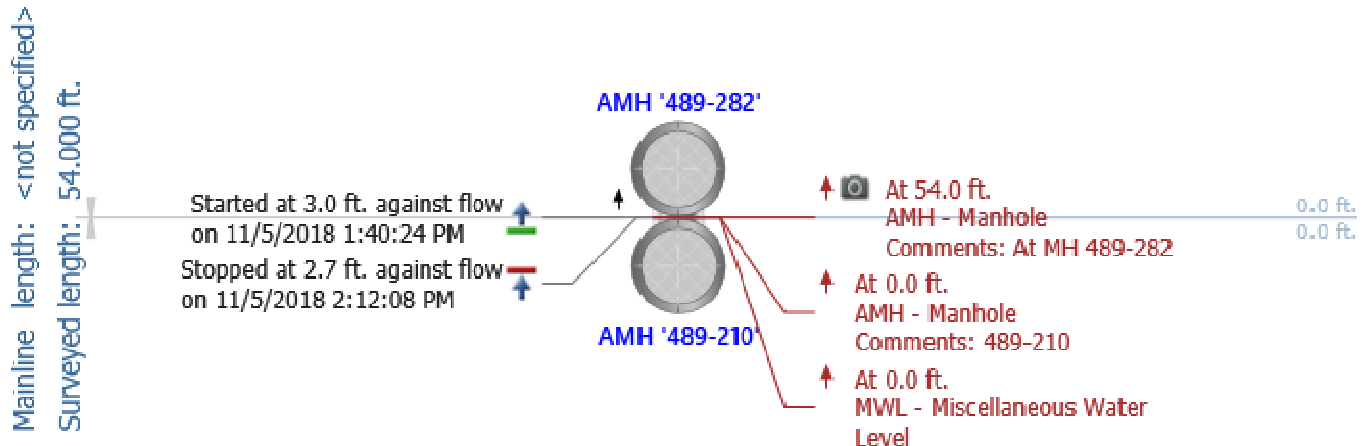


Notes: 489-283 to 489-210

- 12-in. CMP
- 48 LF
- Discoloration in 4:00 and 8:00 position, 3 LF to 36 LF, becomes surface corrosion 36 LF to end of survey
- 1" deformation, 7:00 position at 4 LF
- Surface corrosion visible in invert
- Flow: Minimal
- Grade score of: 2

Main Inspections Pipe Run

Project name:	Mainline ID:	City:	Street:
Downtown/Ingra	489-282 to 489-210	Anchorage	Ingra
Start date/time:	Direction:	Weather:	Location code:
11/5/2018 1:40 PM	U		
Shape:	Material:	Height:	Width:
C	CMP	12 in.	

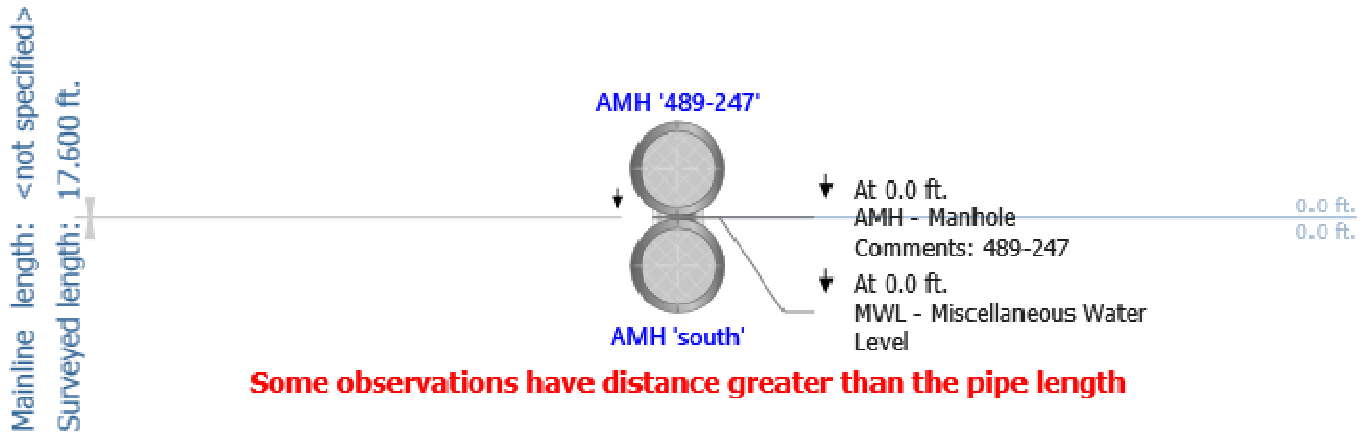


Notes: 489-282 to 489-210

- 12-in. CMP
- 54 LF
- Surface corrosion, 4:00 and 8:00 position, 3 LF to 14 LF, 5:00 and 7:00 position 14 LF to 25 LF
- Debris buildup 1-2" at joint and upstream of joint, 14 LF
- Debris buildup 2-3" in 4:00 and 8:00 position at 20 LF
- Horizontal deflection in pipe, 26 LF
- Surface corrosion visible in invert at 27 LF, 34 LF
- Corrosion, metal loss, 3:00 to 4:00 position 27 LF to 30 LF
- Debris buildup 2-4" at 47 LF/Upstream end of pipe near manhole structure
- Flow: None
- Grade score of: 2

Main Inspections Pipe Run

Project name:	Mainline ID:	City:	Street:
Downtown 5th and 6th	489-242 to 489-241	Anchorage	6th
Start date/time:	Direction:	Weather:	Location code:
10/12/2018 12:56 PM	D		
Shape:	Material:	Height:	Width:
C	CMP	18 in.	



Notes: 489-242 to 489-241

- 18-in. CMP
- 378 LF
- Inspected pipe to view condition below 6th Avenue
- Corrosion in top half of pipe 8 LF to end of survey, pipe appears "rotten", metal rotting, flaking, and falling off into pipe
- Flow: 0-1"
- Grade score of: 4

Storm Drain Structure Summary and Inspection Reports

CR NHS Storm Drain Condition Report
PROJECT NO. 0A310554 / Z591280000

	NHS Storm Drain Structure Conditions Downtown (5th and 6th Ave., Gambell to Orca St. and Ingra Street, 6th Ave. to 8th Ave.)			Defect Grades: 0=No Defect, 1=Minor Defect, 2=Minor to Moderate Defect, 3=Moderate Defect, 4=Significant Defect, 5=Most Significant Defect											
		Avg. Height	Material	Condition of Components											
Page # in Appendix A	Structure No.	Rim-Invert (in.)	Type	Overall	Cover	Frame	Chimney	Steps	Cone	Reducing Slab	Barrel	Base	Connections (Influent)	Connections (Effluent)	Storm Drain Structure Observations
3	213-52	84	Pre-cast Concrete	1	1	1	1	1	N/A	1	1	1	1	1	
	213-55	76	Pre-cast Concrete	1	1	1	1	1	N/A	1	1	1	1	1	
5	213-57	76	Pre-cast Concrete	1	1	1	1	1	N/A	1	1	1	2	1	
	213-60	70	Pre-cast Concrete	1	1	1	1	1	N/A	1	1	1	1	1	
9	489-226	66	Pre-cast Concrete	1	1	1	2	1	N/A	1	1	1	1	1	
	489-225	68	Pre-cast Concrete	1	1	1	1	1	N/A	1	1	1	1	1	
10	489-220	75	Pre-cast Concrete	1	1	1	2	1	N/A	1	1	1	1	1	
	489-217	96	Pre-cast Concrete	1	1	1	1	1	N/A	1	1	1	1	1	
11	489-215	76	Pre-cast Concrete	1	1	1	1	1	N/A	1	1	1	1	1	
12	489-242	90	Pre-cast Concrete	1	1	1	N/A	1	N/A	1	1	1	1	1	
	489-248	88	Pre-cast Concrete	1	1	1	1	1	N/A	1	1	1	1	1	
	489-253	58	Pre-cast Concrete	1	1	1	1	1	N/A	1	N/A	1	1	1	
14	489-212	120	Pre-cast Concrete	3	1	1	3	3	3	N/A	N/A	2	2	2	Exposed aggregate in cone, corroded steps not aligned
15	489-211	113	Pre-cast Concrete	3	1	4	2	2	2	N/A	N/A	2	2	1	One step out of line, loose frame, exposed aggregate in cone

CR NHS STORM DRAIN INSPECTIONS

STORM DRAIN STRUCTURE INSPECTION REPORT

Manhole # **213-52**

Date, Inspector(s), & Location

Date of Inspection: Wednesday, October 3, 2018

Inspector(s): Stratton

General Location: 946 E 5TH AVE

Pipe Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

	Diameter	Type	In-Effluent	Rim to Invert	Depth of Flow	Fill Depth	Connection Type	Grade Score
1	24"	CMP	Influent	84"			Grouted	1
2	12"	CMP	Influent	77"			Grouted	1
3	24"	CMP	Effluent	86"			Grouted	1
4	12"	CMP	Influent	76"	0"	0"	Grouted	1

Structure Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

Overall Structural Condition: 1

Steps: 7, Metal, score 1

Depth of Sump: 19"

Depth of Debris in Sump: 0" to 6"

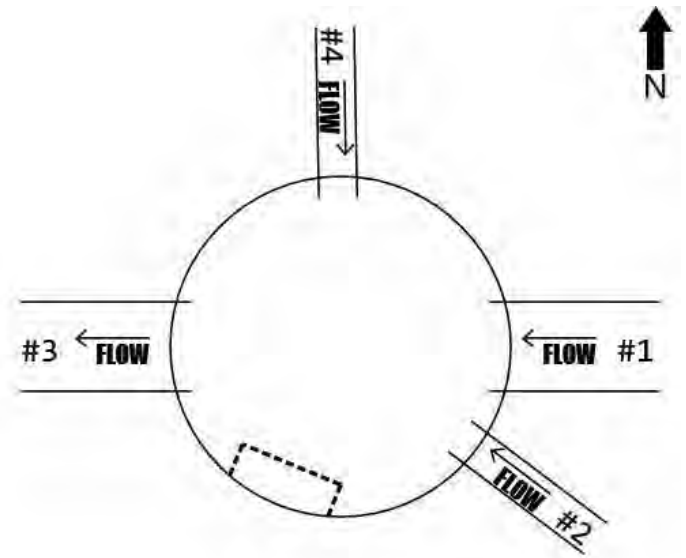
	Component	Material	Geometry	Grade Score	Dim A	Dim B	Height
1	Cover - Standard Cover	Metal	Round	1	32"		
2	Frame	Metal	Round	1			7"
3	Chimney	Precast Concrete	Round	1			9"
4	Reducing Slab	Precast Concrete	Round	1			9"
5	Barrel Section	Precast Concrete	Round	1			40"
6	Base	Precast Concrete	Round	1	48"		40"

Primary Comments:

Additional Comments:



	PIPE ID
1	213-55 to 213-52
2	213-53 to 213-52
3	213-52 to 213-48
4	213-54 to 213-52



Line/Connection Comments:

213-55 to 213-52

21" DIA Inspection completed 10/3/18 140.4'

213-53 to 213-52

Inspection completed 10/3/18 12'

213-52 to 213-48

Inspection completed 10/3/18 238.2'

213-54 to 213-52

INSPECTION COMPLETED 10/3/18 49.1'



Facing North



Frame and Chimney



Ladder rung on reducing slab



South is up

CR NHS STORM DRAIN INSPECTIONS

STORM DRAIN STRUCTURE INSPECTION REPORT

Manhole # **213-55**

Date, Inspector(s), & Location

Date of Inspection: Monday, October 1, 2018

Inspector(s): Stratton

General Location:

Pipe Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

	Diameter	Type	In-Effluent	Rim to Invert	Depth of Flow	Fill Depth	Connection Type	Grade Score
1	12"	CMP	Influent	72"			Grouted	1
2	18"	CMP	Influent	79"			Grouted	1
3	12"	CMP	Influent	73"			Grouted	1
4	24"	CMP	Effluent	80"			Grouted	1

Structure Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

Overall Structural Condition: 1

Steps: 6, Metal, score 1

Depth of Sump: 17"

Depth of Debris in Sump: 0" to 6"

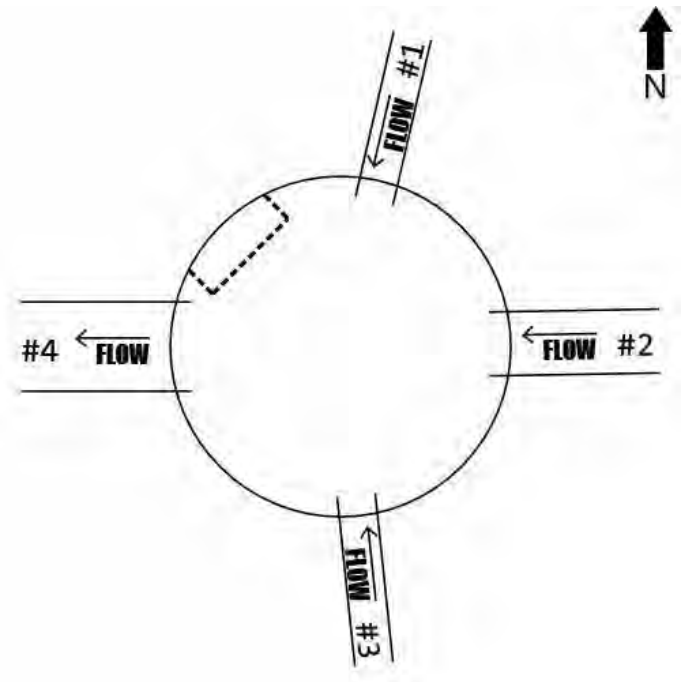
	Component	Material	Geometry	Grade Score	Dim A	Dim B	Height
1	Cover - Standard Cover	Metal	Round	1	32"		
2	Frame	Metal	Round	1			7"
3	Chimney	Precast Concrete	Round	1			8"
4	Reducing Slab	Precast Concrete	Round	1			8"
5	Barrel Section	Precast Concrete	Round	1			28"
6	Base	Precast Concrete	Round	1			48"

Primary Comments:

Additional Comments:



	PIPE ID
1	213-87 to 213-55
2	213-56 to 213-55
3	213-86 to 213-55
4	213-55 to 213-52



Line/Connection Comments:

213-87 to 213-55

inspection STOPPED by debris 22.6' 10/1/18

213-56 to 213-55

21" DIA Inspection completed 10/2/18 192.5'

213-86 to 213-55

inspection completed 10/1/18 8.6'

213-55 to 213-52

21" DIA Inspection completed 10/3/18 140.4'



Facing Northwest



North is up

CR NHS STORM DRAIN INSPECTIONS

STORM DRAIN STRUCTURE INSPECTION REPORT

Manhole # **213-57**

Date, Inspector(s), & Location

Date of Inspection: Monday, October 1, 2018

Inspector(s): Stratton

General Location: 1104 E 5TH AVE

Pipe Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

	Diameter	Type	In-Effluent	Rim to Invert	Depth of Flow	Fill Depth	Connection Type	Grade Score
1	24"	CMP	Influent	79"	0"	0"	Grouted	1
2	12"	CMP	Influent	73"			Grouted	2
3	18"	CMP	Effluent	79"			Grouted	1
4	12"	CMP	Influent	72"	0"	0"	Grouted	1

Structure Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

Overall Structural Condition: 1

Steps: 6, Metal, score 1

Depth of Sump: 17"

Depth of Debris in Sump: 0" to 6"

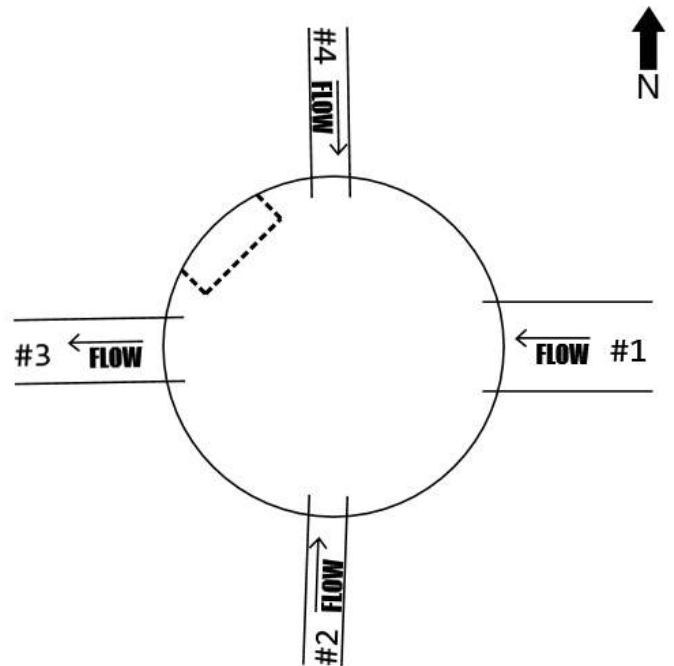
	Component	Material	Geometry	Grade Score	Dim A	Dim B	Height
1	Cover - Standard Cover	Metal	Round	1	32"		
2	Frame	Metal	Round	1			7"
3	Chimney	Precast Concrete	Round	1			8"
4	Reducing Slab	Precast Concrete	Round	1			8"
5	Barrel Section	Precast Concrete	Round	1			28"
6	Base	Precast Concrete	Round	1	48"		48"

Primary Comments:

Additional Comments:



	PIPE ID
1	213-60 to 213-57
2	213-59 to 213-57
3	213-57 to 213-56
4	213-58 to 213-57



Line/Connection Comments:

213-60 to 213-57

21" DIA INSPECTED COMPLETE 10/2/18 278.1'

213-59 to 213-57

inspection completed 6.6' 10/1/18

213-57 to 213-56

INSPECTION COMPLETED 10/2/18 194.4'

213-58 to 213-57

Inspection completed 10/1/18 49.4'



Facing Northwest



Cover



North is up



North is up

CR NHS STORM DRAIN INSPECTIONS

STORM DRAIN STRUCTURE INSPECTION REPORT

Manhole # **213-60**

Date, Inspector(s), & Location

Date of Inspection: Monday, October 1, 2018

Inspector(s): Stratton

General Location: 1150 E 5TH AVE

Pipe Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

	Diameter	Type	In-Effluent	Rim to Invert	Depth of Flow	Fill Depth	Connection Type	Grade Score
1	18"	CMP	Influent	72"	0"	0"	Grouted	1
2	12"	CMP	Influent	68"	0"	0"	Grouted	1
3	24"	CMP	Effluent	74"	0"	0"	Grouted	1
4	12"	CMP	Influent	68"	0"	0"	Grouted	1

Structure Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

Overall Structural Condition: 1

Steps: 6, Metal, score 1

Depth of Sump: 19"

Depth of Debris in Sump: 0" to 6"

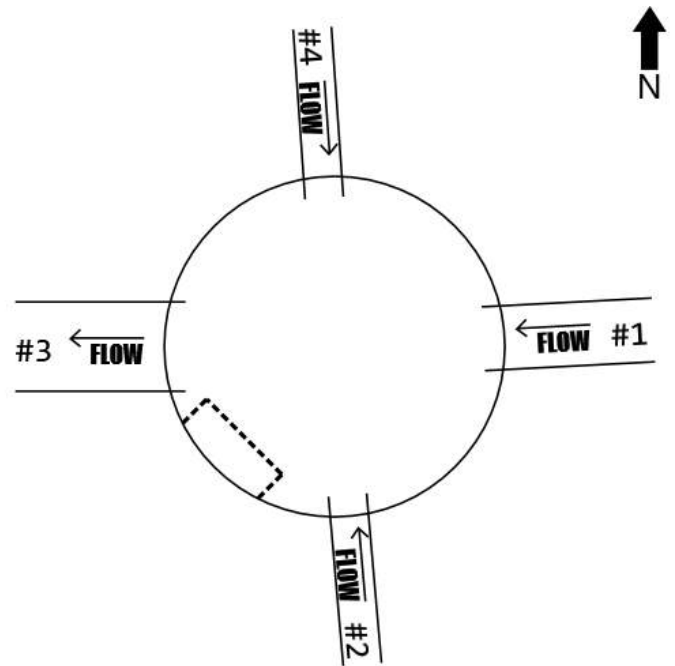
	Component	Material	Geometry	Grade Score	Dim A	Dim B	Height
1	Cover - Standard Cover	Metal	Round	1	32"		
2	Frame	Metal	Round	1			7"
3	Chimney	Precast Concrete	Round	1			1"
4	Reducing Slab	Precast Concrete	Round	1			9"
5	Barrel Section	Precast Concrete	Round	1			28"
6	Base	Precast Concrete	Round	1	48"		48"

Primary Comments:

Additional Comments:



PIPE ID	
1	213-63 to 213-60
2	213-62 to 213-60
3	213-60 to 213-57
4	213-61 to 213-60



Line/Connection Comments:

213-63 to 213-60

Inspection completed 10/2/18 267.8'

213-62 to 213-60

Inspection completed 7' 10/1/18

213-60 to 213-57

21" DIA INSPECTED COMPLETE 10/2/18 278.1'

213-61 to 213-60

Inspection stopped by debris 40.8' 10/1/18



Facing South



Cover



Southwest is up



West is up

CR NHS STORM DRAIN INSPECTIONS

STORM DRAIN STRUCTURE INSPECTION REPORT

Manhole # **489-226**

Date, Inspector(s), & Location

Date of Inspection: Wednesday, October 3, 2018

Inspector(s): Stratton

General Location: 625 GAMBELL ST

Pipe Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

	Diameter	Type	In-Effluent	Rim to Invert	Depth of Flow	Fill Depth	Connection Type	Grade Score
1	12"	CMP	Influent	62"			Grouted	1
2	18"	CMP	Effluent	66"			Grouted	1
3	12"	CMP	Influent	63"			Grouted	1
4	18"	CMP	Influent	66"			Grouted	1

Structure Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

Overall Structural Condition: 1

Steps: 5, Metal, score 1

Depth of Sump: 19"

Depth of Debris in Sump: 0" to 6"

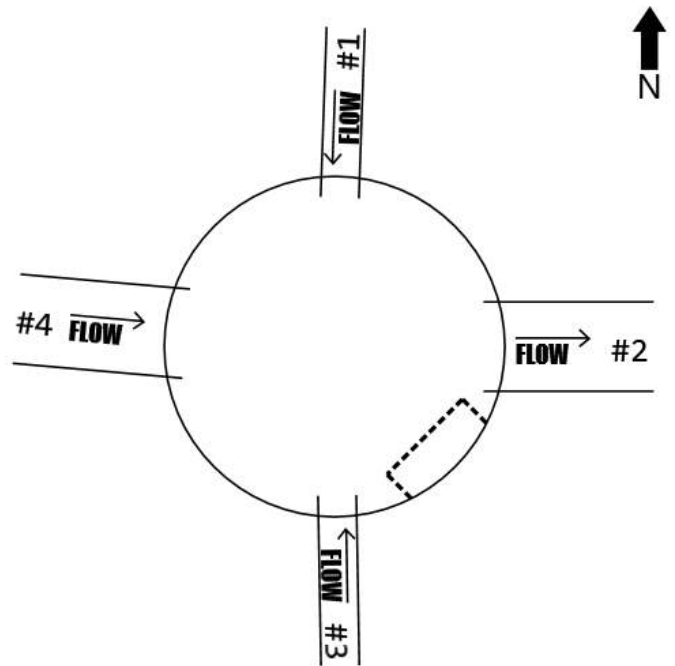
	Component	Material	Geometry	Grade Score	Dim A	Dim B	Height
1	Cover - Standard Cover	Metal	Round	1	32"		
2	Frame	Metal	Round	1			7"
3	Chimney	Precast Concrete	Round	2			8"
4	Reducing Slab	Precast Concrete	Round	1			8"
5	Barrel Section	Precast Concrete	Round	1			14"
6	Base	Precast Concrete	Round	1	48"		48"

Primary Comments:

Additional Comments:



	PIPE ID
1	489-228 to 489-226
2	489-226 to 489-225
3	489-227 to 489-226
4	489-229 to 489-226



Line/Connection Comments:

489-228 to 489-226

Inspection stopped by debris 24.5' 10/3/18

489-226 to 489-225

Inspection COMPLETED 10/3/18 134.7

489-227 to 489-226

INSPECTION COMPLETED 5' 10/3/18

489-229 to 489-226

Inspection completed 10/3/18 159.5'



489-226 Facing North



Cover



Damage to grade rings



Damage to grade rings



489-226 Facing North

CR NHS STORM DRAIN INSPECTIONS

STORM DRAIN STRUCTURE INSPECTION REPORT

Manhole # **489-225**

Date, Inspector(s), & Location

Date of Inspection: Thursday, October 4, 2018

Inspector(s): Stratton

General Location: 625 GAMBELL ST

Pipe Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

	Diameter	Type	In-Effluent	Rim to Invert	Depth of Flow	Fill Depth	Connection Type	Grade Score
1	12"	CMP	Influent	65"			Grouted	1
2	18"	CMP	Effluent	69"			Grouted	1
3	12"	CMP	Influent	65"			Grouted	1
4	18"	CMP	Influent	68"			Grouted	1

Structure Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

Overall Structural Condition: 1

Steps: 6, Metal, score 1

Depth of Sump: 17"

Depth of Debris in Sump: 0" to 6"

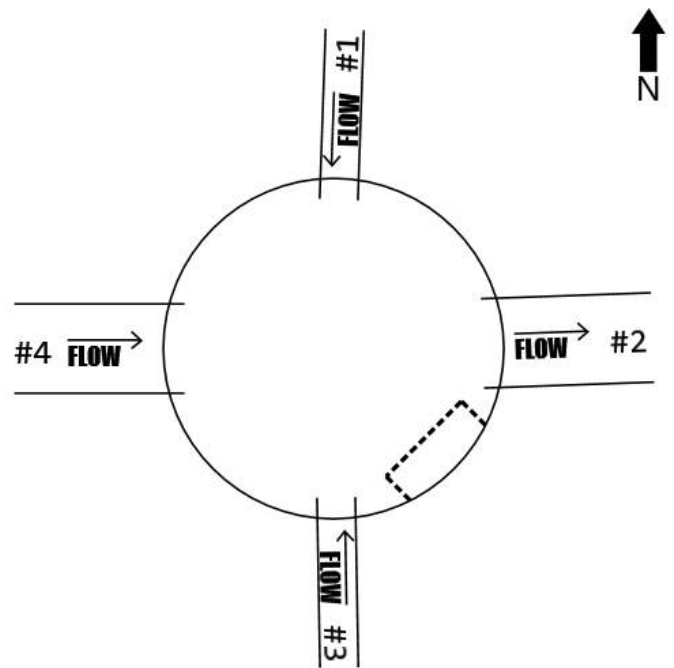
	Component	Material	Geometry	Grade Score	Dim A	Dim B	Height
1	Cover - Standard Cover	Metal	Round	1	32"		
2	Frame	Metal	Round	1			7"
3	Chimney	Precast Concrete	Round	1			7"
4	Reducing Slab	Precast Concrete	Round	1			8"
5	Barrel Section	Precast Concrete	Round	1			38"
6	Base	Precast Concrete	Round	1			26"

Primary Comments:

Additional Comments:



PIPE ID	
1	489-234 to 489-225
2	489-225 to 489-220
3	489-232 to 489-225
4	489-226 to 489-225



Line/Connection Comments:

489-234 to 489-225

Inspection completed 10/4/18 34.5'

489-225 to 489-220

Inspection completed 10/3/18 76.3'

489-232 to 489-225

PHOTOGRAPHED 10/4/18

489-226 to 489-225

Inspection COMPLETED 10/3/18 134.7



CR NHS STORM DRAIN INSPECTIONS

STORM DRAIN STRUCTURE INSPECTION REPORT

Manhole # **489-220**

Date, Inspector(s), & Location

Date of Inspection: Thursday, October 4, 2018

Inspector(s): Stratton

General Location:

Pipe Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

	Diameter	Type	In-Effluent	Rim to Invert	Depth of Flow	Fill Depth	Connection Type	Grade Score
1	18"	CMP	Effluent	76"			Grouted	1
2	12"	CMP	Influent	71"			Grouted	1
3	18"	CMP	Influent	75"			Grouted	1
4	18"	CMP	Influent	70"			Grouted	1

Structure Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

Overall Structural Condition: 1

Steps: 6, Metal, score 1

Depth of Sump: 15"

Depth of Debris in Sump: 0" to 6"

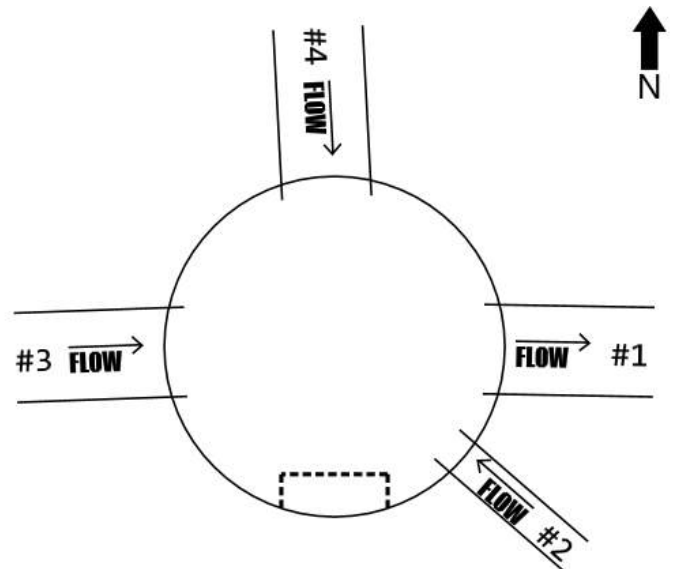
	Component	Material	Geometry	Grade Score	Dim A	Dim B	Height
1	Cover - Standard Cover	Metal	Round	1	32"		
2	Frame	Metal	Round	1			7"
3	Chimney	Precast Concrete	Round	2			7"
4	Reducing Slab	Precast Concrete	Round	1			8"
5	Barrel Section	Precast Concrete	Round	1			29"
6	Base	Precast Concrete	Round	1	48"		40"

Primary Comments:

Additional Comments:



	PIPE ID
1	489-220 to 489-217
2	489-223 to 489-220
3	489-225 to 489-220
4	489-221 to 489-220



Line/Connection Comments:

489-220 to 489-217

INSPECTION COMPLETED 10/4/18 138.4'

489-223 to 489-220

Inspection completed 10/4/18 15.5'

489-225 to 489-220

Inspection completed 10/3/18 76.3'

489-221 to 489-220

Inspection completed 10/4/18 51.2'



489-220 Facing North



Cover



Chimney



North/Northeast is up

CR NHS STORM DRAIN INSPECTIONS

STORM DRAIN STRUCTURE INSPECTION REPORT

Manhole # **489-217**

Date, Inspector(s), & Location

Date of Inspection: Thursday, October 4, 2018

Inspector(s): Stratton

General Location: 832 E 6TH AVE

Pipe Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

	Diameter	Type	In-Effluent	Rim to Invert	Depth of Flow	Fill Depth	Connection Type	Grade Score
1	18"	CMP	Effluent	99"			Grouted	1
2	12"	CMP	Influent	94"			Grouted	1
3	18"	CMP	Influent	99"			Grouted	1
4	12"	CMP	Influent	96"			Grouted	1

Structure Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

Overall Structural Condition: 1

Steps: 8, Metal, score 1

Depth of Sump: 19"

Depth of Debris in Sump: 0" to 6"

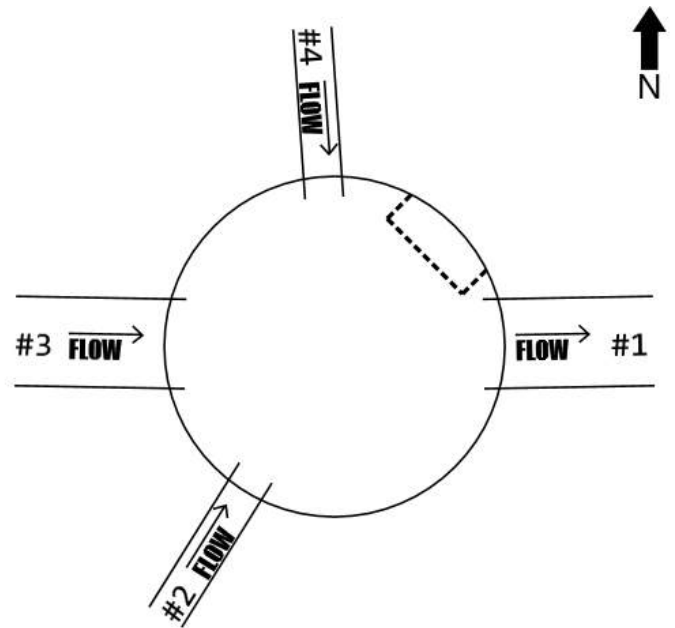
	Component	Material	Geometry	Grade Score	Dim A	Dim B	Height
1	Cover - Standard Cover	Metal	Round	1	32"		
2	Frame	Metal	Round	1			7"
3	Chimney	Precast Concrete	Round	1			7"
4	Reducing Slab	Precast Concrete	Round	1			9"
5	Barrel Section	Precast Concrete	Round	1			52"
6	Base	Precast Concrete	Round	1			43"

Primary Comments:

Additional Comments:



	PIPE ID
1	489-217 to 489-214
2	489-218 to 489-217
3	489-220 to 489-217
4	489-219 to 489-217



Line/Connection Comments:

489-217 to 489-214

Inspection completed 10/4/18 186.1'

489-218 to 489-217

PHOTOGRAPHED 10/4/18

489-220 to 489-217

INSPECTION COMPLETED 10/4/18 138.4'

489-219 to 489-217

Inspection completed 10/4/18 34.5'



Facing East



Cover and Frame



Chimney/Frame



489-217 Northwest is up

CR NHS STORM DRAIN INSPECTIONS

STORM DRAIN STRUCTURE INSPECTION REPORT

Catch Basin # **489-215**

Date, Inspector(s), & Location

Date of Inspection: Tuesday, November 6, 2018

Inspector(s): Miller

General Location: 575 INGRA ST

Pipe Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

	Diameter	Type	In-Effluent	Rim to Invert	Depth of Flow	Fill Depth	Connection Type	Grade Score
1	18"	CMP	Effluent	78"			Grouted	1
2	12"	CMP	Influent	74"			Grouted	1

Structure Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

Overall Structural Condition: 1

Steps: 6, Metal, score 1

Depth of Sump: 16"

Depth of Debris in Sump: 0" to 6"

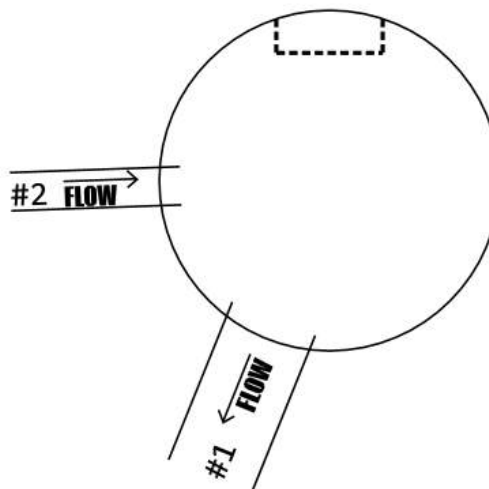
	Component	Material	Geometry	Grade Score	Dim A	Dim B	Height
1	Cover - Standard Cover	Metal	Rectangular	1	35"	18"	
2	Frame	Metal	Rectangular	1			10"
3	Chimney	Precast Concrete	Round	1			8"
4	Reducing Slab	Precast Concrete	Round	1			8"
5	Barrel Section	Precast Concrete	Round	1			27"
6	Base	Precast Concrete	Round	1			45"

Primary Comments:

Additional Comments:



	PIPE ID
1	489-215 to 489-214
2	489-216 to 489-215



Line/Connection Comments:

489-215 to 489-214

71.7' INSPECTED COMPLETE 11/6/18

489-216 to 489-215

INSPECTED 42.5' 10/11/18 Complete



489-215 Facing Southwest



Cover/Frame



West is up



Manhole interior, west is up

CR NHS STORM DRAIN INSPECTIONS

STORM DRAIN STRUCTURE INSPECTION REPORT

Manhole # **489-242**

Date, Inspector(s), & Location

Date of Inspection: Friday, October 12, 2018

Inspector(s): Miller

General Location:

Pipe Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

	Diameter	Type	In-Effluent	Rim to Invert	Depth of Flow	Fill Depth	Connection Type	Grade Score
1	12"	CMP	Influent	71"			Grouted	1
2	18"	CMP	Influent				Grouted	1
3	12"	CMP	Influent	90"			Grouted	1
4	18"	CMP	Effluent				Grouted	1
5	12"	CMP	Influent	90"			Grouted	1
6	12"	CMP	Influent	90"			Grouted	1
7	12"	CPEP	Influent	81"			Grouted	1

Structure Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

Overall Structural Condition: 1

Steps: 8, Metal, score 1

Depth of Sump: 36"

Depth of Debris in Sump: 0" to 6"

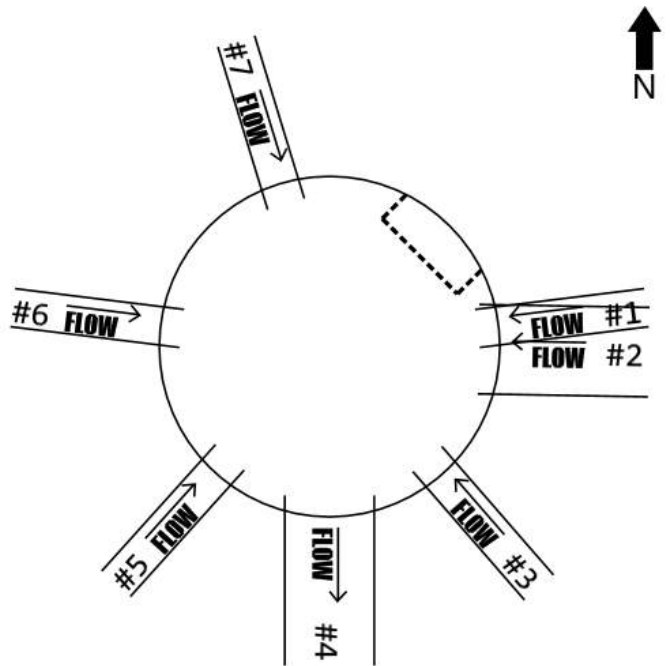
	Component	Material	Geometry	Grade Score	Dim A	Dim B	Height
1	Cover - Standard Cover	Metal	Round	2	25"		
2	Frame	Metal	Round	1			10"
3	Reducing Slab	Precast Concrete	Round	1			9"
4	Barrel Section	Precast Concrete	Round	1			40"
5	Base	Precast Concrete	Round	1			50"

Primary Comments: NOW 247

Additional Comments:



	PIPE ID
1	489-255 to 489-242
2	489-248 to 489-242
3	489-244 to 489-242
4	489-242 to 489-241
5	489-243 to 489-242
6	489-247 to 489-242
7	489-245 to 489-242



Line/Connection Comments:

489-255 to 489-242

INSPECTED 10/12/18 38.6' COMPLETE

489-248 to 489-242

187.3' INSPECTED COMPLETE 10/12/18

489-244 to 489-242

INSPECTED 55.5' COMPLETE 10/12/18

489-242 to 489-241

Inspected 17.6' 10/12/18, stopped by pipe defect

489-243 to 489-242

49.2' INSPECTED COMPLETE 10/12/18

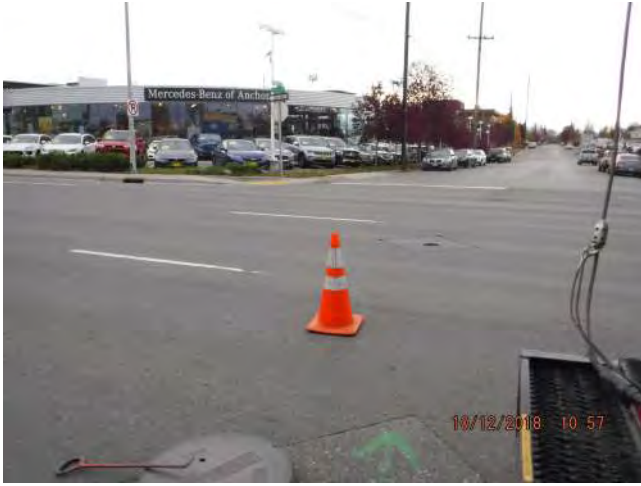
489-247 to 489-242

21.6' INSPECTED COMPLETE 10/12/18

489-245 to 489-242

139.3' INSPECTED 10/11/18





Facing Southeast



Cover



North is up



North is up

CR NHS STORM DRAIN INSPECTIONS

STORM DRAIN STRUCTURE INSPECTION REPORT

Manhole # **489-248**

Date, Inspector(s), & Location

Date of Inspection: Friday, October 12, 2018

Inspector(s): Miller

General Location: 1015 E 6TH AVE

Pipe Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

	Diameter	Type	In-Effluent	Rim to Invert	Depth of Flow	Fill Depth	Connection Type	Grade Score
1	18"	CMP	Influent	88"			Grouted	1
2	18"	CMP	Effluent	88"			Grouted	1

Structure Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

Overall Structural Condition: 1

Steps: 7, Metal, score 1

Depth of Sump: 20"

Depth of Debris in Sump: 0" to 6"

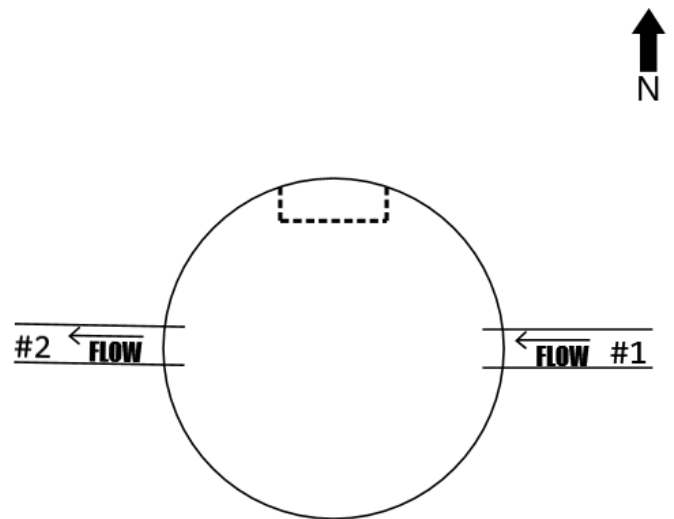
	Component	Material	Geometry	Grade Score	Dim A	Dim B	Height
1	Cover - Standard Cover	Metal	Round	1	32"		
2	Frame	Metal	Round	1			8"
3	Chimney	Precast Concrete	Round	1			7"
4	Reducing Slab	Precast Concrete	Round	1			9"
5	Barrel Section	Precast Concrete	Round	1			42"
6	Base	Precast Concrete	Round	1			46"

Primary Comments:

Additional Comments:



	PIPE ID
1	489-249 to 489-248
2	489-248 to 489-242



Line/Connection Comments:

489-249 to 489-248

191.6' INSPECTED COMPLETE 10/12/18

489-248 to 489-242

187.3' INSPECTED COMPLETE 10/12/18



Facing South



Cover



North is up



Northwest is up



Frame and Chimney

CR NHS STORM DRAIN INSPECTIONS

STORM DRAIN STRUCTURE INSPECTION REPORT

Catch Basin # **489-253**

Date, Inspector(s), & Location

Date of Inspection: Friday, October 12, 2018

Inspector(s): Miller

General Location:

Pipe Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

	Diameter	Type	In-Effluent	Rim to Invert	Depth of Flow	Fill Depth	Connection Type	Grade Score
1	18"	CMP	Effluent	62"			Grouted	1
2	12"	CMP	Influent	55"			Grouted	1

Structure Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

Overall Structural Condition: 1

Steps: 4, Metal, score 1

Depth of Sump: 18"

Depth of Debris in Sump: 0" to 6"

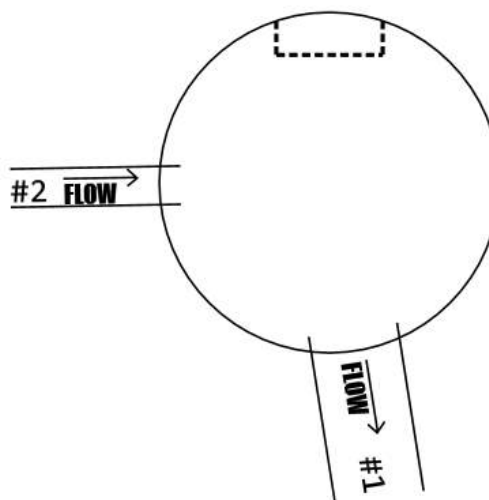
	Component	Material	Geometry	Grade Score	Dim A	Dim B	Height
1	Cover - Standard Cover	Metal	Rectangular	1	18"	36"	
2	Frame	Metal	Rectangular	1			10"
3	Chimney	Precast Concrete	Round	1			8"
4	Reducing Slab	Precast Concrete	Round	1			8"
5	Base	Precast Concrete	Round	1			58"

Primary Comments:

Additional Comments:



PIPE ID	
1	489-253 to 489-249
2	489-254 to 489-253



Line/Connection Comments:

489-253 to 489-249

Inspected 26.2' Complete 10/12/18

489-254 to 489-253

INSPECTED 26.7' STOPPED BY DEBRIS 10/12/18



Facing Southwest



Cover/Frame, West is up



West is up



North is up

CR NHS STORM DRAIN INSPECTIONS

STORM DRAIN STRUCTURE INSPECTION REPORT

Manhole # **489-212**

Date, Inspector(s), & Location

Date of Inspection: Monday, November 5, 2018

Inspector(s): Miller

General Location:

Pipe Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

	Diameter	Type	In-Effluent	Rim to Invert	Depth of Flow	Fill Depth	Connection Type	Grade Score
1	18"	CMP	Influent	125"			Grouted	2
2	12"	CMP	Influent	90"			Grouted	2
3	24"	RCP	Influent	151"			Grouted	1
4	24"	RCP	Effluent	151"			Grouted	2
5	12"	CMP	Influent	90"			Grouted	2
6	12"	CMP	Influent	90"			Grouted	2

Structure Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

Overall Structural Condition: 3

Steps: 7, Metal, score 3

Depth of Sump: 12"

Depth of Debris in Sump: 0" to 6"

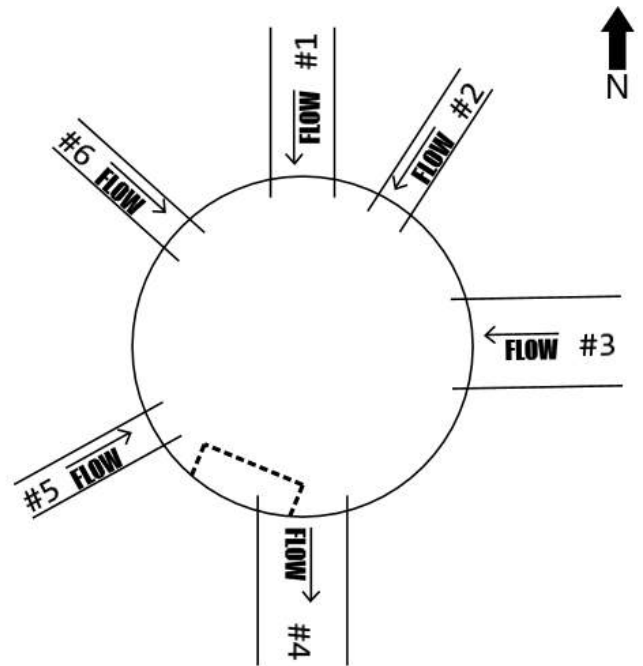
	Component	Material	Geometry	Grade Score	Dim A	Dim B	Height
1	Cover - Standard Cover	Metal	Round	1	25"		
2	Frame	Metal	Round	1			8"
3	Chimney	Precast Concrete	Round	3			16"
4	Cone	Precast Concrete	Concentric	3			40"
5	Base	Brick	Round	2			98"

Primary Comments: EXPOSED AGGREGATE IN CONE, CORRODED STEPS NOT IN ALIGNMENT

Additional Comments:



	PIPE ID
1	489-214 to 489-212
2	489-236 to 489-212
3	489-237 to 489-212
4	489-212 to 489-211
5	489-213 to 489-212
6	489-235 to 489-212



Line/Connection Comments:

489-214 to 489-212

346.1' INSPECTED COMPLETE 11/5/18

489-236 to 489-212

51.6' INSPECTED COMPLETE 11/5/18

489-237 to 489-212

102.7' INSPECTED COMPLETE 11/5/18

489-212 to 489-211

187.8' Inspected Complete 11/2/18

489-213 to 489-212

Inspected 37.3' COMPLETE 11/5/18

489-235 to 489-212

44.4' Inspected Complete 11/2/18



489-212 Facing West



Cover



Frame



Manhole interior, North is up



Manhole interior, North is up

CR NHS STORM DRAIN INSPECTIONS

STORM DRAIN STRUCTURE INSPECTION REPORT

Manhole # **489-211**

Date, Inspector(s), & Location

Date of Inspection: Friday, November 2, 2018

Inspector(s): Miller

General Location: 839 E 8TH AVE

Pipe Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

	Diameter	Type	In-Effluent	Rim to Invert	Depth of Flow	Fill Depth	Connection Type	Grade Score
1	24"	RCP	Influent	113"			Grouted	1
2	12"	CMP	Influent	65"			Grouted	2
3	24"	RCP	Effluent	113"			Grouted	1
4	12"	CMP	Influent	65"			Grouted	2

Structure Characteristics

Defect grades: 0=No defect, 1=Minor defect, 2=Minor to moderate defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect

Overall Structural Condition: 3

Steps: 4, Metal, score 2

Depth of Sump: 5"

Depth of Debris in Sump: 0" to 6"

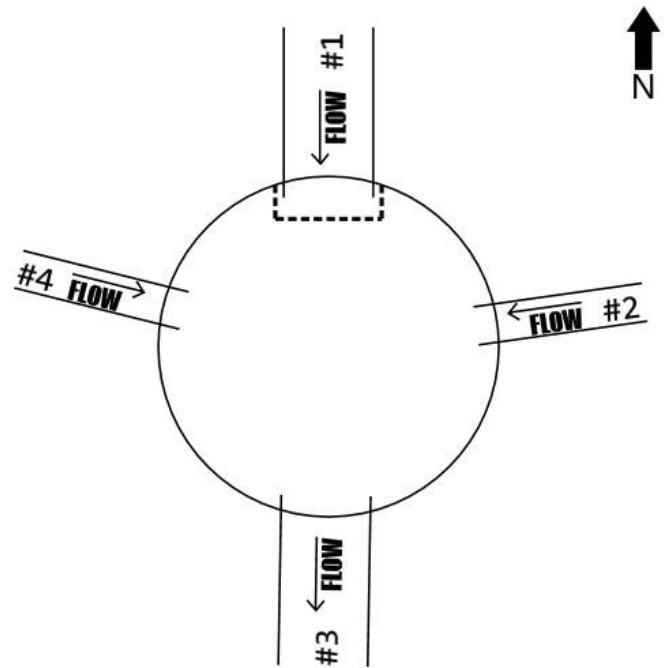
	Component	Material	Geometry	Grade Score	Dim A	Dim B	Height
1	Cover - Standard Cover	Metal	Round	1	25"		
2	Frame	Metal	Round	4			10"
3	Chimney	Brick	Round	2			9"
4	Cone	Precast Concrete	Concentric	2			32"
5	Base	Brick	Round	2			64"

Primary Comments: One step Northwest, loose frame, exposed aggregate in cone

Additional Comments:



	PIPE ID
1	489-212 to 489-211
2	489-281 to 489-211
3	489-211 to 489-210
4	489-280 to 489-211



Line/Connection Comments:

489-212 to 489-211

187.8' Inspected Complete 11/2/18

489-281 to 489-211

Inspected 30.2' Complete 11/2/18

489-211 to 489-210

156.2' Inspected complete 11/2/18

489-280 to 489-211

Inspected 17.3' Complete 11/2/18



489-211 Facing South



Cover



Frame



Manhole Interior, North is up

**CCTV Inspection Videos
In Digital Storage Device
(Attached Separately)**