



32ND AND 33RD Avenue Upgrades

Structure Number 1630-066

Pipe Inspection Results

Location of Storm Drain Structure: Northeast corner of Eureka Street and 32nd Avenue

Camera type: Quickview Camera

Quickview camera can observe from 10 to 300 feet of pipe depending on existing pipe condition, slope, and diameter.

1 Pipe viewing sequence number

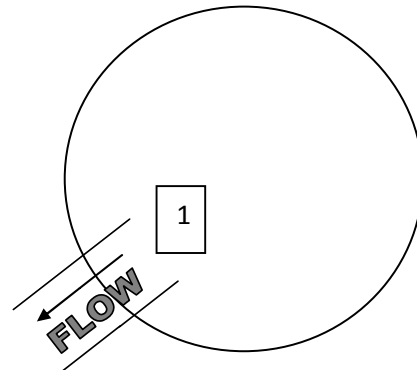
Pipe Observations:

Segment 1-

Pipe type: 10-inch CPEP

General Comments

- No defects observed



32nd and 33rd Avenue Upgrades

SEWER MANHOLE INSPECTION REPORT

Manhole # **1630-067**

DATE, INSPECTOR(S), & LOCATION DATA

Date of Inspection: Monday, July 10, 2017

Inspector(s): Porter, Bailey

Atmosphere: O₂- N/A LEL- N/A H₂S- N/A CO- N/A

General Location Features: Southeast corner of 32nd Avenue and Eureka Street

PIPE CHARACTERISTICS

In-Effluent Pipe Size/Type/Diameter	Rim to Invert	Depth of Flow
1. 10-inch CPEP Effluent	40"	Minimal

Depth of Sum, Depth of Debris in Sump: 12-inch sump with 2-inches of debris

MANHOLE CHARACTERISTIC

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

Overall Structural Condition: 1.

Material of Construction: Precast

Manhole Shape: Circular

Dimensions: 48-inch

Cover/Lid: 25x18-inch, CI, with a grade score of 1 rolled curb

Frame: 4-inch tall, CI, with a grade score of 1

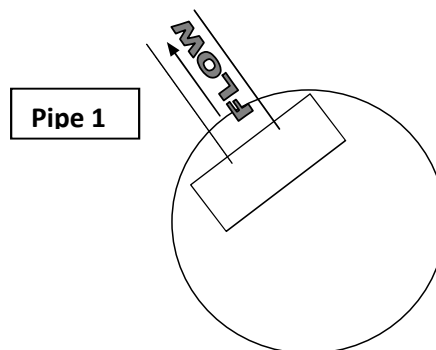
Chimney: 2-chimneys totaling 8-inches with a grade score of 1

Reducing slab: 1-8 inch with a grade score of 1

Base: 36-inch with a grade score 1

Effluent Pipe Connection: 5-inch protrusion grout grade score of 1.

Additional Comment: Manhole in good condition





MH 1630-067 looking north



MH 1630-067 looking east



MH frame



chimney and reducing slab



effluent pipe



32ND AND 33RD Avenue Upgrades

Structure Number 1630-067

Pipe Inspection Results

Location of Storm Drain Structure: Southeast corner of Eureka Street and 32nd Avenue

Camera type: Quickview Camera

Quickview camera can observe from 10 to 300 feet of pipe depending on existing pipe condition, slope, and diameter.

1 Pipe viewing sequence number

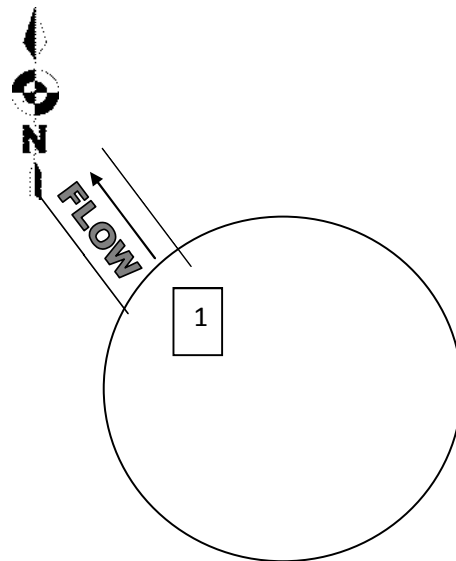
Pipe Observations:

Segment 1-

Pipe type: 10-inch CPEP

General Comments

- No defects observed



32nd and 33rd Avenue Upgrades

SEWER MANHOLE INSPECTION REPORT

Manhole # **1630-109**

DATE, INSPECTOR(S), & LOCATION DATA

Date of Inspection: Tuesday, July 11, 2017

Inspector(s): Porter, Bailey

Atmosphere: O₂- N/A LEL- N/A H₂S- N/A CO- N/A

General Location Features: Southeast corner of 3150 C Street parking lot

PIPE CHARACTERISTICS

In-Effluent Pipe Size/Type/Diameter	Rim to Invert	Depth of Flow
1. 15-inch CMP Influent	62"	2-inches
1. 15-inch CMP Effluent	63"	3-inches
1. 6-inch Cast Iron Influent	64"	4-inches

Depth of Sum, Depth of Debris in Sump: 12-inch sump with 2-inches of debris

MANHOLE CHARACTERISTIC

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

Overall Structural Condition: 2.

Material of Construction: Precast

Manhole Shape: Circular

Dimensions: 48-inch

Cover/Lid: 21-inch lid, CI, with a grade score of 2

Frame: 10-inch tall, CI, with a grade score of 2

Cone: 1-40 inch eccentric cone with a grade score of 3.

Cone is cracked where pipe penetrations are. See photos

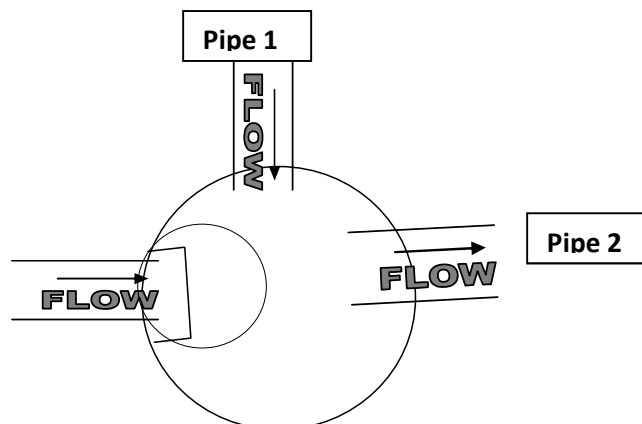
Steps: 3-metal steps, with a grade score of 2.

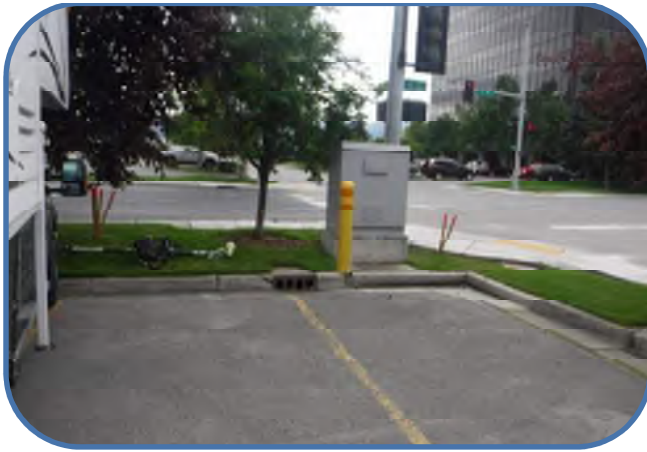
Base: 32-inch with a grade score 2

Influent Pipe Connection: Influent pipe connections are not grouted, 15-inch influent is flush with manhole wall, 6-inch influent protrudes 3 inches, grade score of 4.

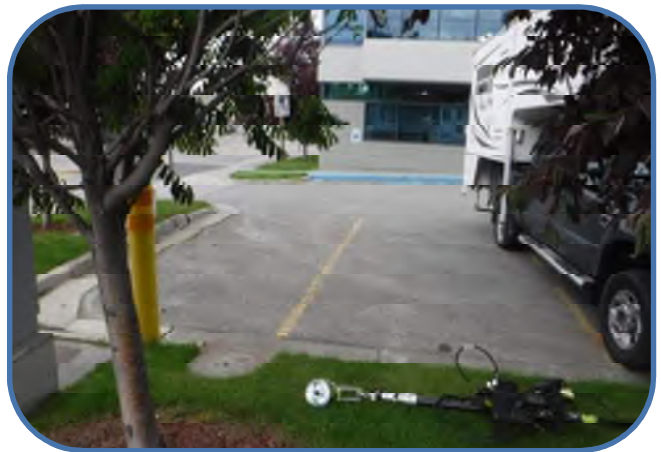
Effluent Pipe Connection: Effluent pipe connection is not grouted, effluent protrudes 6 inches, grade score of 4

Additional Comment: Cracks separated approx. ½ inch were observed in manhole cone.





MH 1630-109 looking north



MH looking west



MH frame



6-inch influent



influent and effluent 15-inch pipe



32ND AND 33RD Avenue Upgrades

Structure Number 1630-109

Pipe Inspection Results

Location of Storm Drain Structure: South corner of Arctic Blvd and 32nd Avenue

Camera type: Quickview Camera

Quickview camera can observe from 10 to 300 feet of pipe depending on existing pipe condition, slope, and diameter.

1

Pipe viewing sequence number

Pipe Observations:

Segment 1-

Pipe type: 15-inch CMP

General Comments

- Up to 6-inches of sediment buildup in invert

Segment 2-

Pipe type: 15-inch CMP

General Comments

- Up to 2-inches of sediment buildup in invert
- Possible hole in pipe with root intrusion. see photo 1

Segment 3-

Pipe type: 6-inch CI

General Comments

- Root intrusion see photo 2.

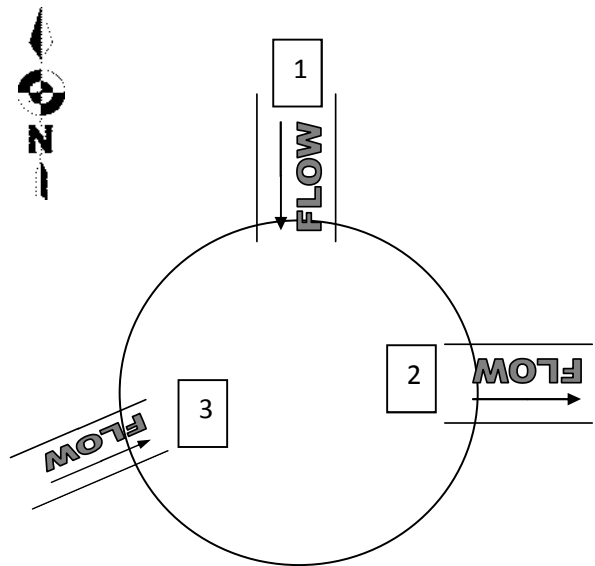




Photo 1-Possible hole in pipe at 8 o'clock with root intrusion.



Photo 2-Root intrusion at joint within pipe.

32nd and 33rd Avenue Upgrades

SEWER MANHOLE INSPECTION REPORT

Manhole # **1630-158**

DATE, INSPECTOR(S), & LOCATION DATA

Date of Inspection: Monday, July 10, 2017

Inspector(s): Porter, Bailey

Atmosphere: O₂- N/A LEL- N/A H₂S- N/A CO- N/A

General Location Features: Northwest corner of Bering Street and 32nd Avenue

PIPE CHARACTERISTICS

In-Effluent Pipe Size/Type/Diameter	Rim to Invert	Depth of Flow
1. 12-inch CMP Effluent	35"	2"

Depth of Sum, Depth of Debris in Sump: Debris was greater than 6-inches deep could not determine depth of sump.

MANHOLE CHARACTERISTIC

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

Overall Structural Condition: 2.

Material of Construction: Precast

Manhole Shape: Circular

Dimensions: 48-inch

Cover/Lid: 25x18-inch, CI, with a grade score of 2 rolled curb

Frame: 4-inch tall, CI, with a grade score of 2

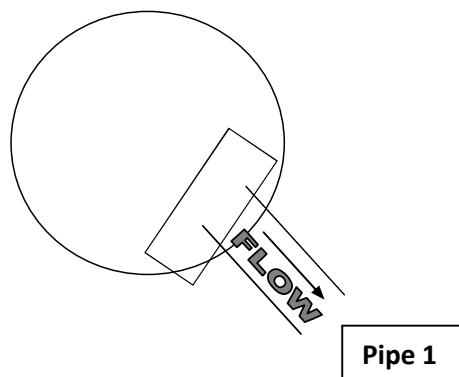
Chimney: 2-chimneys totaling 10-inches with a grade score of 3, chimney is cracked.

Reducing slab: 1-6 inch with a grade score of 2, chimney offset from reducing slab by 3-inches.

Base: Unable to measure depth due to debris in sump with a grade score 2

Effluent Pipe Connection: 3-inch protrusion grout is flaking and cracked, grade score of 3.

Additional Comment: invert was soft when probed with moderate force within manhole.





MH 1630-052 looking north



MH frame



cracked chimney



vegetation growing between chimneys and
reducing slab



12-inch effluent cracked grout



32ND AND 33RD Avenue Upgrades

Structure Number 1630-158

Pipe Inspection Results

Location of Storm Drain Structure: Northwest corner of Bering Street and 32nd Avenue

Camera type: Quickview Camera

Quickview camera can observe from 10 to 300 feet of pipe depending on existing pipe condition, slope, and diameter.

1

Pipe viewing sequence number

Pipe Observations:

Segment 1-

Pipe type: 12-inch CMP

General Comments

- Up to 4-inches of sediment buildup in invert blocking most of photo (see photo 1)

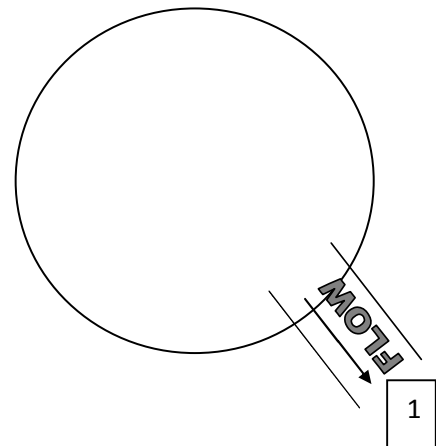




Photo 1-4 inches of debris in invert blocking flow

32nd and 33rd Avenue Upgrades

SEWER MANHOLE INSPECTION REPORT

Manhole # **1630-170**

DATE, INSPECTOR(S), & LOCATION DATA

Date of Inspection: Tuesday, July 11, 2017

Inspector(s): Porter, Bailey

Atmosphere: O₂- N/A LEL- N/A H₂S- N/A CO- N/A

General Location Features: Northwest Corner of 32nd Avenue and A street

PIPE CHARACTERISTICS

In-Effluent Pipe Size/Type/Diameter	Rim to Invert	Depth of Flow
1. 12-inch Unknown Effluent	22"	Min.
2. 12-inch Unknown Influent	22"	Min.

Depth of Sum, Depth of Debris in Sump: 12 inch sump, 2 inches of debris

MANHOLE CHARACTERISTIC

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

Overall Structural Condition: 4.

Material of Construction: Cast in Place

Manhole Shape: Rectangular

Dimensions: 24x36-inch

Cover/Lid: 36x18-inch slotted, CI, with a grade score of 2

Frame: 6-inch tall, CI, with a grade score of 2

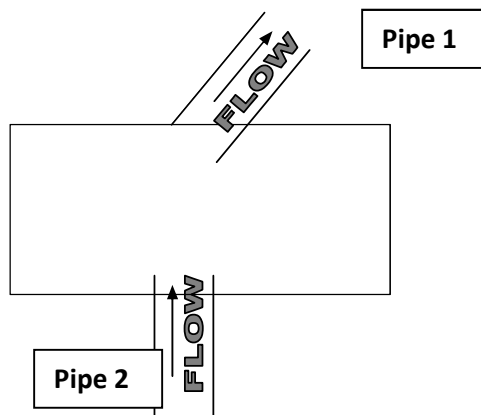
Chimney: 1-4 inch with a score of 4, 4-inch tall by 10-inch long hole in reducing slab.

Base: 26-inch tall base with a grade score of 3, cracks are present in base.

Influent Pipe Connection: No grout cracked around pipe, with a grade score of 3

Effluent Pipe Connection: 1-inch protrusion grout missing hole by connection, grade score of 3

Additional Comment: Pipe is likely a type of fiberglass polymer pipe





MH 1630-170 looking north



MH looking north



mh frame and cover



influent pipe



grout cracked on base effluent pipe



grout cracked in chimney



32ND AND 33RD Avenue Upgrades

Structure Number 1630-170

Pipe Inspection Results

Location of Storm Drain Structure: Northwest corner of A street and 32nd Avenue

Camera type: Quickview Camera

Quickview camera can observe from 10 to 300 feet of pipe depending on existing pipe condition, slope, and diameter.

1

Pipe viewing sequence number

Pipe Observations:

Segment 1-

Pipe type: 12-inch FRP

General Comments

- Hole in top of pipe with root intrusion between 10 o'clock and 2 o'clock position, see photo 1
- 4-inches of debris in invert

Segment 2-

Pipe type: 12-inch FRP

General Comments

- Up to 2-inches of sediment buildup in invert

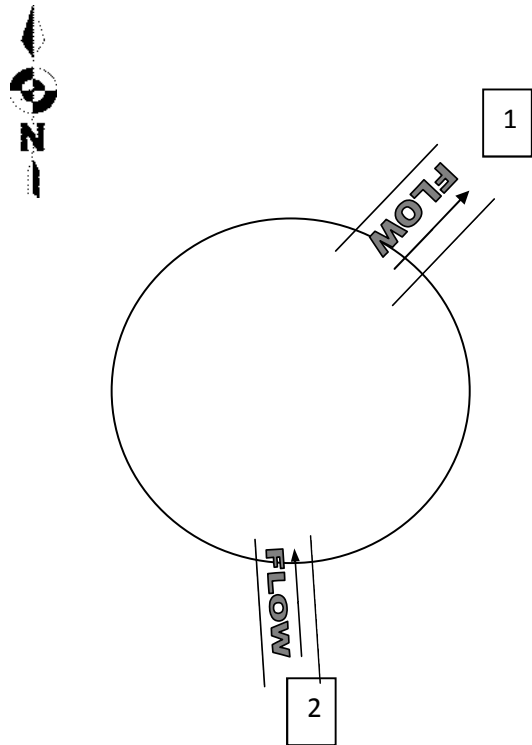




Photo 1-Hole in crown of pipe between 10 o'clock and 2 o'clock position

32nd and 33rd Avenue Upgrades

SEWER MANHOLE INSPECTION REPORT

Manhole # **1630-188**

DATE, INSPECTOR(S), & LOCATION DATA

Date of Inspection: Tuesday, July 11, 2017

Inspector(s): Porter, Bailey

Atmosphere: O₂- N/A LEL- N/A H₂S- N/A CO- N/A

General Location Features: Southeast corner of Arctic Blvd and 32nd Avenue

PIPE CHARACTERISTICS

In-Effluent Pipe Size/Type/Diameter	Rim to Invert	Depth of Flow
1. 12-inch CMP Influent	42"	1"
2. 15-inch CMP Influent	42"	1"
3. 15-inch CMP Effluent	43"	1"

Depth of Sum, Depth of Debris in Sump: 12-inch sump, 6-8-inches debris

MANHOLE CHARACTERISTIC

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

Overall Structural Condition: 2.

Material of Construction: Precast

Manhole Shape: Circular

Dimensions: 48-inch

Cover/Lid: 22x18-inch, CI, with a grade score of 2. Small amount of corrosion on frame and inlet.

Frame: 7-inch tall, CI, with a grade score of 2

Chimney: 1-3 inch with a grade score of 1

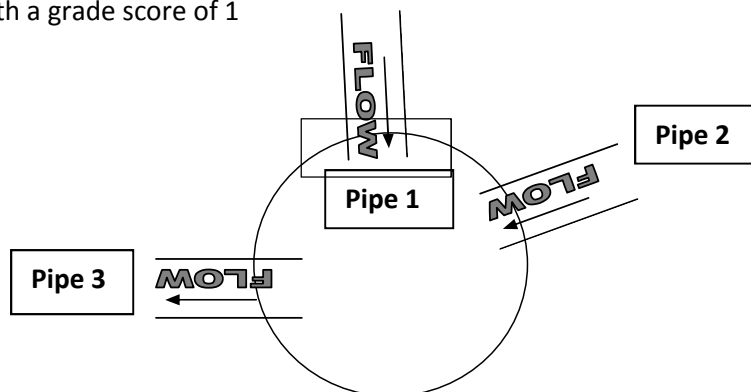
Reducing slab: 1-8 inch with a grade score of 1

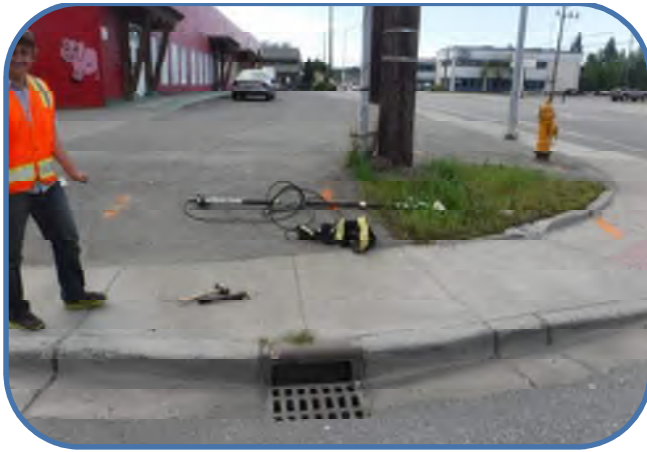
Base: 1-38-inch with a grade score of 2.

Influent Pipe Connection: 3-inch protrusion grout for both 12-inch and 15-inch CMP influent grade score of 2

Effluent Pipe Connection: 3-inch protrusion grout is flaking grade score of 2

Additional Comment: Soil protruding between frame and chimney. Separation is approx. ½ inch. Frame is offset from chimney and reducing slab approx. 6-inches to the north.





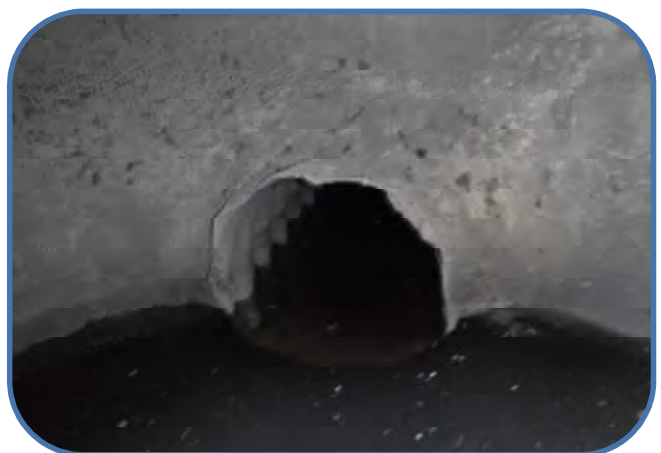
MH 1630-188 looking south



MH frame



Offset frame from manhole



15-inch effluent to west



12-inch influent to north



15-inch influent to east



32ND AND 33RD Avenue Upgrades

Structure Number 1630-188

Pipe Inspection Results

Location of Storm Drain Structure: South corner of Arctic Blvd and 32nd Avenue

Camera type: Quickview Camera

Quickview camera can observe from 10 to 300 feet of pipe depending on existing pipe condition, slope, and diameter.

1

 Pipe viewing sequence number

Pipe Observations:

Segment 1-

Pipe type: 12-inch CMP

General Comments

- Up to 6-inches of sediment buildup in invert
- Invert soft when probed with moderate force

Segment 2-

Pipe type: 15-inch CMP

General Comments

- Up to 2-inches of sediment buildup in invert
- Possible hole in pipe with root intrusion. see photo 1
- Invert soft when probed with moderate force within manhole.

Segment 3-

Pipe type: 15-inch CMP

General Comments

- Root intrusion see photo 2.

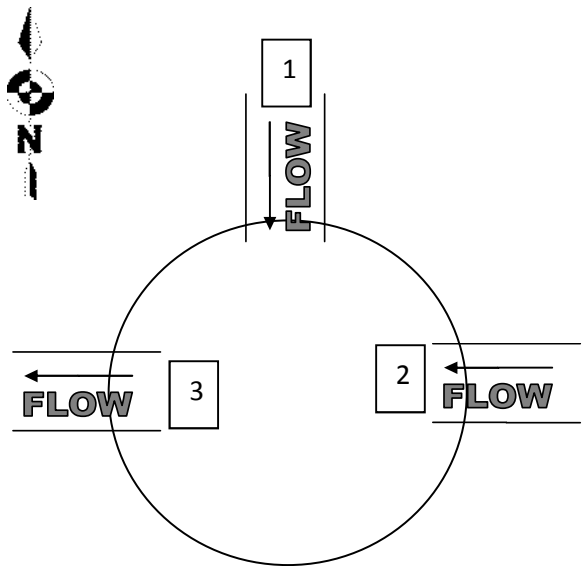




Photo 1-Possible hole in pipe at 8 o'clock with root intrusion.



Photo 2-Root intrusion at joint within pipe.

32nd and 33rd Avenue Upgrades

SEWER MANHOLE INSPECTION REPORT

Manhole # **1630-203**

DATE, INSPECTOR(S), & LOCATION DATA

Date of Inspection: Tuesday, July 11, 2017

Inspector(s): Porter, Bailey

Atmosphere: O₂- N/A LEL- N/A H₂S- N/A CO- N/A

General Location Features: Westside of C street in front of 3150 C street

PIPE CHARACTERISTICS

In-Effluent Pipe Size/Type/Diameter	Rim to Invert	Depth of Flow
1. 12-inch CMP Effluent	59"	Min.
2. 15-inch CMP Influent	59"	Min.

Depth of Sum, Depth of Debris in Sump: Too much debris to measure sump

MANHOLE CHARACTERISTIC

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

Overall Structural Condition: 2.

Material of Construction: Cast in Place

Manhole Shape: Rectangular

Dimensions: 24x36 inch

Cover/Lid: 36x18-inch slotted, CI, with a grade score of 2

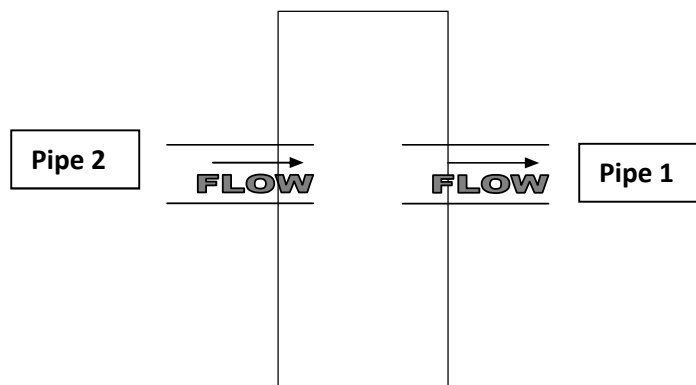
Frame: 7-inch tall, CI, with a grade score of 2

Base: Too much debris to measure base, with a grade score of 2.

Influent Pipe Connection: Protrudes 6 inches, with a grade score of 2.

Effluent Pipe Connection: No protrusion, grout missing, with a grade score of 3.

Additional Comment: Influent pipe is 15-inch CMP effluent pipe is 12-inch CMP.





MH 1630-203 looking south



MH frame



effluent pipe is to the left in photo



influent pipe is flush



effluent pipe is on left



32ND AND 33RD Avenue Upgrades

Structure Number 1630-203

Pipe Inspection Results

Location of Storm Drain Structure: Northwest intersection at 32nd Avenue and C Street in curblane of C street

Camera type: Quickview Camera

Quickview camera can observe from 10 to 300 feet of pipe depending on existing pipe condition, slope, and diameter.

1

Pipe viewing sequence number

Pipe Observations:

Segment 1-

Pipe type: 12-inch CMP

General Comments

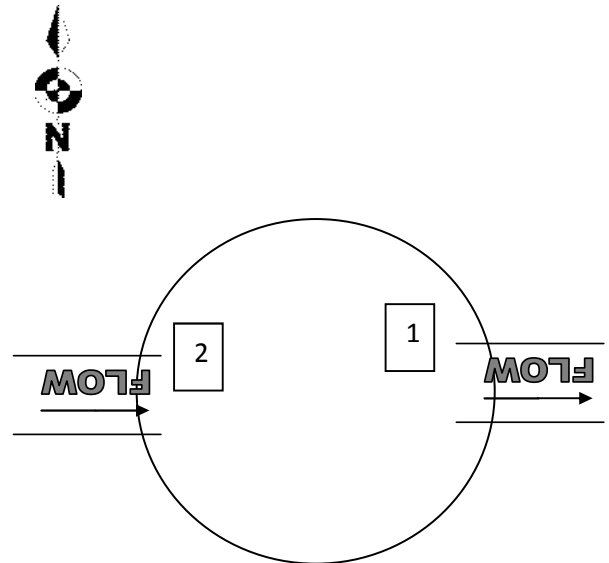
- 2-inches of debris in invert.

Segment 2-

Pipe type: 12-inch CMP

General Comments

- No defects observed.



32nd and 33rd Avenue Upgrades

SEWER MANHOLE INSPECTION REPORT

Manhole # **1630-204**

DATE, INSPECTOR(S), & LOCATION DATA

Date of Inspection: Wednesday, July 12, 2017

Inspector(s): Porter, Bailey

Atmosphere: O₂- N/A LEL- N/A H₂S- N/A CO- N/A

General Location Features: Eastside of C street in Curblin on NE corner of C street and 32nd Avenue

PIPE CHARACTERISTICS

In-Effluent Pipe Size/Type/Diameter	Rim to Invert	Depth of Flow
1. 8-inch Cast Iron Influent	61	Min.
2. 12-inch CMP Effluent	61"	Min.

Depth of Sum, Depth of Debris in Sump: Too much debris to measure sump

MANHOLE CHARACTERISTIC

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

Overall Structural Condition: 2.

Material of Construction: Cast in Place

Manhole Shape: Rectangular

Dimensions: 24x36 inch

Cover/Lid: 36x18-inch slotted, CI, with a grade score of 2

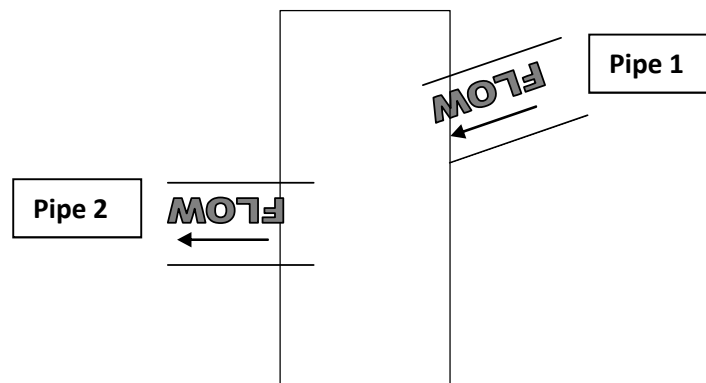
Frame: 7 inch tall, CI, with a grade score of 2

Base: Too much debris to measure with a grade score of 2.

Influent Pipe Connection: Protrudes into manhole 2 inches, no connection to manhole, soil visible, grade score of 4.

Effluent Pipe Connection: No protrusion, grade score of 3.

Additional Comment: Electrical conduit and old wiring in pipe, Effluent leads to paved over manhole in C street 1630-101





MH 1630-204 looking south



MH looking north



influent pipe



effluent pipe



sump full of debris



32ND AND 33RD Avenue Upgrades

Structure Number 1630-204

Pipe Inspection Results

Location of Storm Drain Structure: Northeast intersection at 32nd Avenue and C Street in curblin
of C street

Camera type: Quickview Camera

*Quickview camera can observe from 10 to 300 feet of pipe depending on existing pipe condition, slope,
and diameter.*

1

Pipe viewing sequence number

Pipe Observations:

Segment 1-

Pipe type: 8-inch Cast Iron

General Comments

- Very little of pipe inspected due to alignment of pipe into manhole
- Electrical wire on invert of pipe, likely thaw system
- Pipe has potential grade issues, standing water observed in pipe approximately 5 feet to east of MH1630- 204, see photo 1.

Segment 2-

Pipe type: 12-inch CMP

General Comments

- 1-2 inches of debris in pipe bottom.
- MH 1630-101 not inspected. MH paved over in C street.

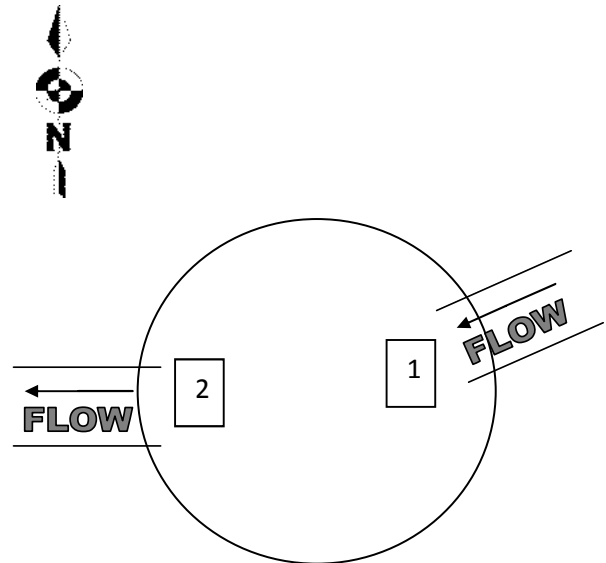




Photo 1-Standing water in pipe

32nd and 33rd Avenue Upgrades

SEWER MANHOLE INSPECTION REPORT

Manhole # **1630-210**

DATE, INSPECTOR(S), & LOCATION DATA

Date of Inspection: Monday, July 10, 2017

Inspector(s): Porter, Bailey

Atmosphere: O₂- N/A LEL- N/A H₂S- N/A CO- N/A

General Location Features: Southside of intersection 32nd Avenue and Dawson Street

PIPE CHARACTERISTICS

In-Effluent Pipe Size/Type/Diameter	Rim to Invert	Depth of Flow
1. 12-inch CMP Effluent	45"	Minimal

Depth of Sum, Depth of Debris in Sump: debris was greater than 6-inches deep could not determine depth of sump.

MANHOLE CHARACTERISTIC

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

Overall Structural Condition: 2.

Material of Construction: Precast

Manhole Shape: Circular

Dimensions: 48-inch

Cover/Lid: 25x18-inch, CI, with a grade score of 2 rolled curb

Frame: 4-inch tall, CI, with a grade score of 2

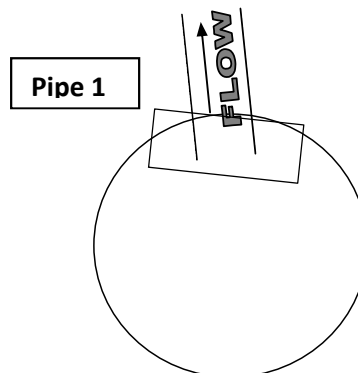
Chimney: 2-chimneys totaling 9-inches with a grade score of 3

Reducing slab: 1-6 inch with a grade score of 1

Base: unable to measure depth due to debris in sump, grade score 1

Effluent Pipe Connection: 4-inch protrusion, grade score of 2.

Additional Comment: Invert of effluent pipe was missing where penetrates within manhole





MH 1630-210 looking north



MH 1630-210



MH frame



effluent pipe



grout cracked between frame and chimney



32ND AND 33RD Avenue Upgrades

Structure Number 1630-210

Pipe Inspection Results

Location of Storm Drain Structure: South curblane of 32nd Avenue at the intersection of Dawson Street

Camera type: Quickview Camera

Quickview camera can observe from 10 to 300 feet of pipe depending on existing pipe condition, slope, and diameter.

1

Pipe viewing sequence number

Pipe Observations:

Segment 1-

Pipe type: 12-inch CMP

General Comments

- 5 inches of debris blocking flow (see photo 1)
- Invert of pipe entering manhole was corroded and missing

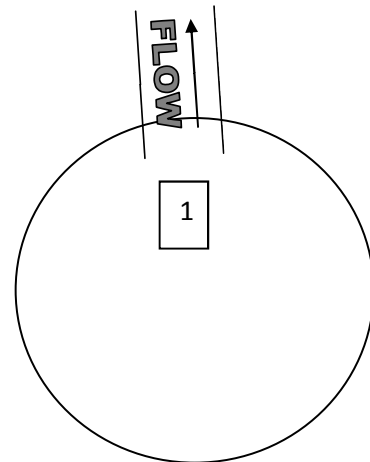




Photo 1-5 inches of debris in invert blocking flow

32nd and 33rd Avenue Upgrades

SEWER MANHOLE INSPECTION REPORT

Manhole # **1630-214**

DATE, INSPECTOR(S), & LOCATION DATA

Date of Inspection: Tuesday, July 11, 2017

Inspector(s): Porter, Bailey

Atmosphere: O₂- N/A LEL- N/A H₂S- N/A CO- N/A

General Location Features: Southeast corner Northrim bank parking lot

PIPE CHARACTERISTICS

In-Effluent Pipe Size/Type/Diameter	Rim to Invert	Depth of Flow
1. 12-inch Unknown Effluent	28"	Min.
2. 12-inch Unknown Influent	28"	Min.

Depth of Sum, Depth of Debris in Sump: Too much debris

MANHOLE CHARACTERISTIC

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

Overall Structural Condition: 3.

Material of Construction: Cast in Place

Manhole Shape: Rectangular

Dimensions: 24x36 inch

Cover/Lid: 36x18-inch slotted, CI, with a grade score of 2

Frame: 4 inch tall, CI, with a grade score of 2

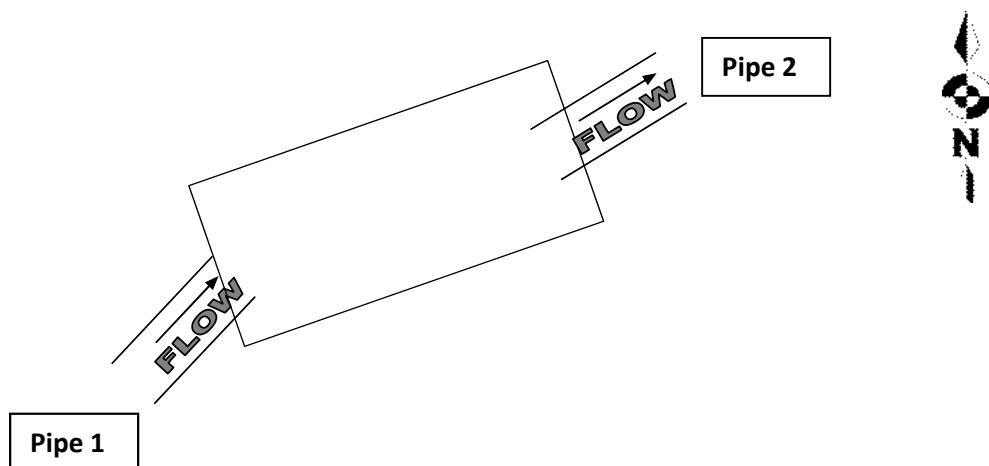
Chimney: 1-4 inch tall, with a grade score of 4

Base: too much debris to measure with a grade score of 3. Cracks are present in base

Influent Pipe Connection: 3-inch protrusion grout is present grade score of 1.

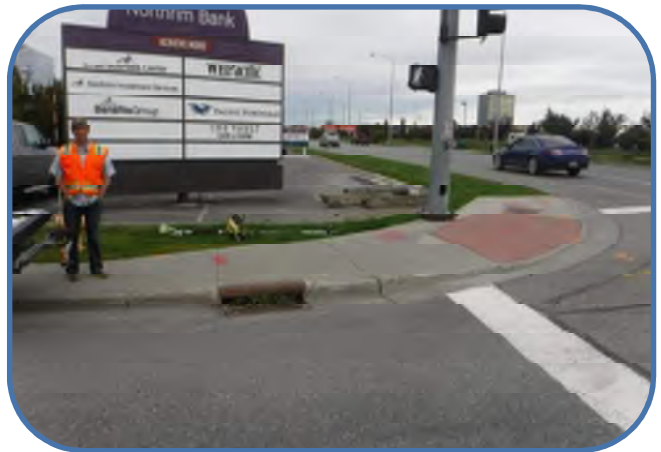
Effluent Pipe Connection: 1-inch protrusion grout missing, hole by connection grade score of 3

Additional Comment: Pipe is likely a type of fiberglass polymer pipe.





MH 1630-214 looking south



MH looking north



mh frame and cover



influent pipe



cracks on base effluent pipe



cracks in chimney



32ND AND 33RD Avenue Upgrades

Structure Number 1630-214

Pipe Inspection Results

Location of Storm Drain Structure: Northwest corner of A street and 32nd Avenue

Camera type: Quickview Camera

Quickview camera can observe from 10 to 300 feet of pipe depending on existing pipe condition, slope, and diameter.

1 Pipe viewing sequence number

Pipe Observations:

Segment 1-

Pipe type: 12-inch FRP

General Comments

- Hole in pipe 5 o'clock position (see photo 1)
- Pipe transitions between FRP pipe and CMP pipe

Segment 2-

Pipe type: 12-inch FRP

General Comments

- Hole in pipe/possible collapse (see photo 2)

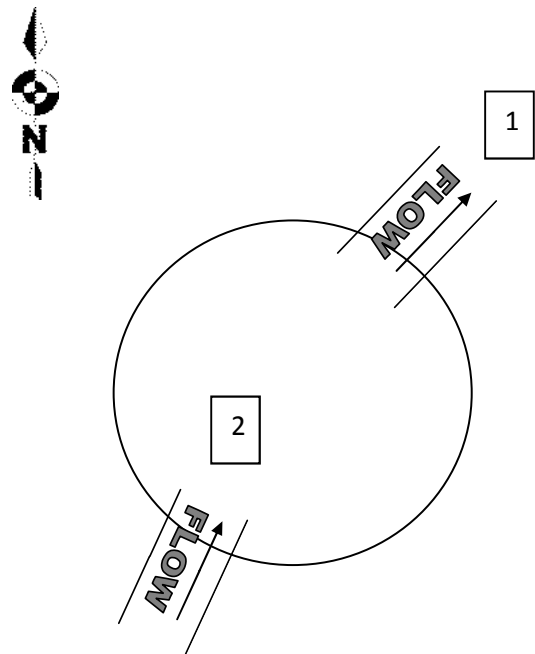




Photo 1-Hole in pipe at 5 o'clock position



Photo 2-Pipe collapsing between 7 and 11 o'clock soil void visible behind hole.

32nd and 33rd Avenue Upgrades

SEWER MANHOLE INSPECTION REPORT

Manhole # **1630-215**

DATE, INSPECTOR(S), & LOCATION DATA

Date of Inspection: Wednesday, July 12, 2017

Inspector(s): Porter, Bailey

Atmosphere: O₂- N/A LEL- N/A H₂S- N/A CO- N/A

General Location Features: West curbline in A street in front of Northrim Bank

PIPE CHARACTERISTICS

In-Effluent Pipe Size/Type/Diameter	Rim to Invert	Depth of Flow
1. 12-inch Unknown Influent	42"	Min.
2. 12-inch CMP Effluent	42"	Min.

Depth of Sum, Depth of Debris in Sump: Too much debris to measure sump

MANHOLE CHARACTERISTIC

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

Overall Structural Condition: 3.

Material of Construction: Cast in Place

Manhole Shape: Rectangular

Dimensions: 24x36 inch

Cover/Lid: 36x18-inch slotted, CI, with a grade score of 2

Frame: 7-inch tall, CI, with a grade score of 2

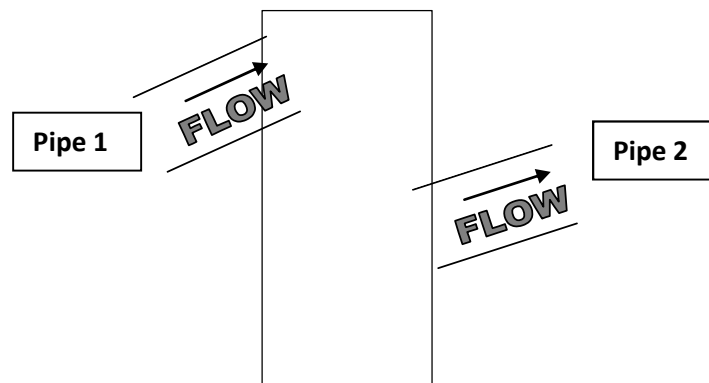
Chimney: 1-5 inch chimney with, grade score of 4 multiple cracks and missing grout.

Base: Too much debris to measure with a grade score of 2.

Influent Pipe Connection: 2-inch protrusion grout is good condition, grade score of 1.

Effluent Pipe Connection: No protrusion and multiple cracks in grout, grade score of 3.

Additional Comment: Pipe is likely a type of fiberglass polymer pipe. Frame is broken on the inlet see photos





MH 1630-215 looking north



mh frame and inlet



effluent pipe



effluent pipe



influent pipe



cracked and broken chimney



32ND AND 33RD Avenue Upgrades

Structure Number 1630-215

Pipe Inspection Results

Location of Storm Drain Structure: Northwest intersection at 32nd Avenue and A Street in curblane of A street

Camera type: Quickview Camera

Quickview camera can observe from 10 to 300 feet of pipe depending on existing pipe condition, slope, and diameter.

1

Pipe viewing sequence number

Pipe Observations:

Segment 1-

Pipe type: 12-inch FRP

General Comments

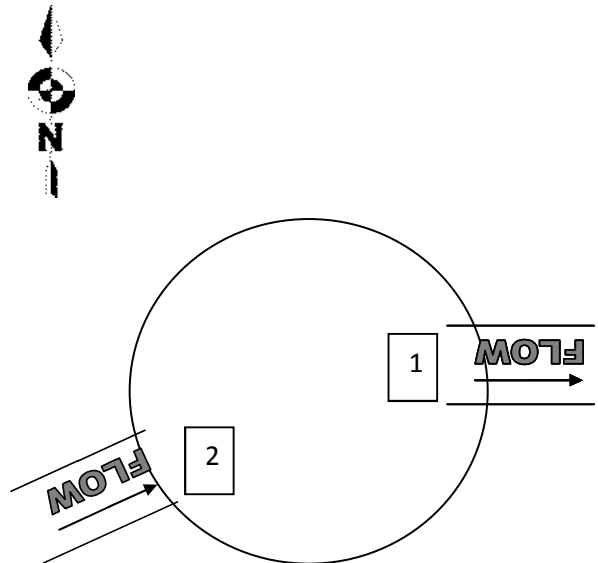
- 2-inches of debris in invert

Segment 2-

Pipe type: 12-inch FRP

General Comments

- Could not inspect very much of pipeline due to alignment of pipe into manhole



32nd and 33rd Avenue Upgrades

SEWER MANHOLE INSPECTION REPORT

Manhole # **1630-216**

DATE, INSPECTOR(S), & LOCATION DATA

Date of Inspection: Tuesday, July 11, 2017

Inspector(s): Porter, Bailey

Atmosphere: O₂- N/A LEL- N/A H₂S- N/A CO- N/A

General Location Features: 32nd Avenue Eastbound in front of Residential Mortgage

PIPE CHARACTERISTICS

In-Effluent Pipe Size/Type/Diameter	Rim to Invert	Depth of Flow
1. 12-inch Unknown Effluent	24"	Min.

Depth of Sum, Depth of Debris in Sump: Too much debris

MANHOLE CHARACTERISTIC

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

Overall Structural Condition: 3.

Material of Construction: Cast in Place

Manhole Shape: Rectangular

Dimensions: 24x36 inch

Cover/Lid: 36x18-inch slotted, CI, with a grade score of 2

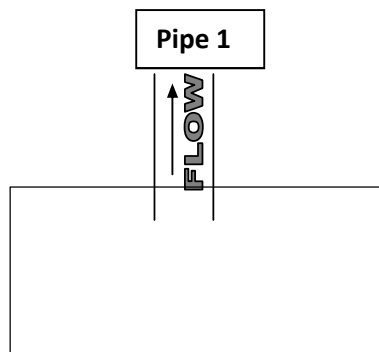
Frame: 4 inch tall, CI, with a grade score of 2

Chimney: 1-4 inches of chimneys with a grade score of 3 cracks in chimney

Base: 30-inch with a grade score of 3.

Effluent Pipe Connection: 4-inch protrusion no grout is present grade score of 4.

Additional Comment: Pipe is likely a type of fiberglass polymer pipe.





MH 1631-216 looking east



MH looking west



mh frame and cover



base and pipe penetration. no grout



grout cracked on chimney



base



32ND AND 33RD Avenue Upgrades

Structure Number 1630-216

Pipe Inspection Results

Location of Storm Drain Structure: Southwest corner of A street and 32nd Avenue

Camera type: Quickview Camera

Quickview camera can observe from 10 to 300 feet of pipe depending on existing pipe condition, slope, and diameter.

1 Pipe viewing sequence number

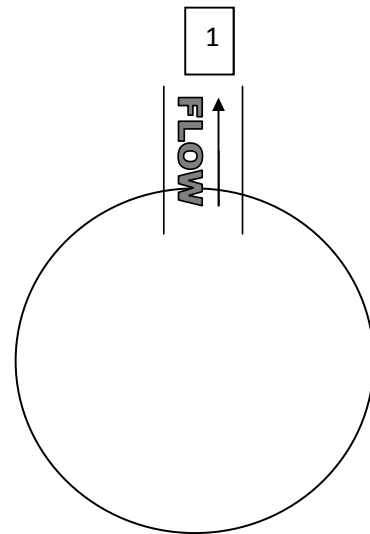
Pipe Observations:

Segment 1-

Pipe type: 12-inch FRP

General Comments

- 2-inches of debris on invert



32nd and 33rd Avenue Upgrades

SEWER MANHOLE INSPECTION REPORT

Manhole # **1631-002**

DATE, INSPECTOR(S), & LOCATION DATA

Date of Inspection: Wednesday, July 12, 2017

Inspector(s): Porter, Bailey

Atmosphere: O₂- N/A LEL- N/A H₂S- N/A CO- N/A

General Location Features: Center MH southside of 33rd Avenue and Denali

PIPE CHARACTERISTICS

In-Effluent Pipe Size/Type/Diameter	Rim to Invert	Depth of Flow
1. 18-inch CPEP Influent	55"	Min.
2. 12-inch CPEP Influent	54"	Min.
3. 21-inch CPEP Effluent	55"	Min.
4. 12-inch CPEP Influent	55"	4-inches

Depth of Sum, Depth of Debris in Sump: 12-inch sump with 3-inches of debris

MANHOLE CHARACTERISTIC

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

Overall Structural Condition: 3.

Material of Construction: Precast

Manhole Shape: Circular

Dimensions: 72-inch

Cover/Lid: 25-inch lid, CI, with a grade score of 2

Frame: 2-8 inch tall, CI, with a grade score of 2

Chimney: 2 chimneys totaling 12-inches with a grade score of 2.

Steps: 3-poly steps, with a grade score of 1.

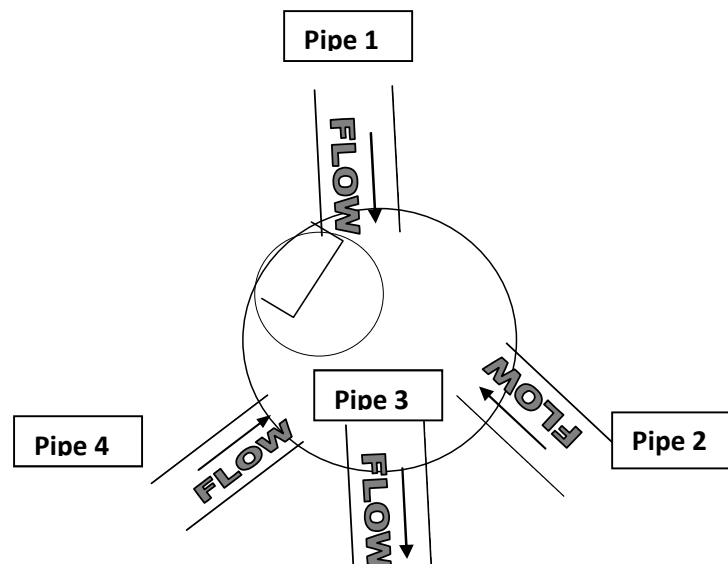
Reducing Slab: 1-6 inch with a grade score 1

Base: 1-48-inch with a grade score 4, multiple cracks in the base

Influent Pipe Connection: Influent pipe connection grout is flaking, 18-inch protrudes 4 inches 12-inch CPEP protrudes 3 inches. Grade score of 3.

Effluent Pipe Connection: Effluent pipe connection grout is flaking. Effluent protrudes 6 inches. Grade score of 2.

Additional Comment: Grade rings slightly offset





MH 1631-002 looking north



MH looking south



MH frame



18-inch influent



influent 12-inch pipe



effluent 21-inch pipe



32ND AND 33RD Avenue Upgrades

Structure Number 1631-002

Pipe Inspection Results

Location of Storm Drain Structure: Center MH southside of 33rd and Denali

Camera type: Quickview Camera

Quickview camera can observe from 10 to 300 feet of pipe depending on existing pipe condition, slope, and diameter.

1 Pipe viewing sequence number

Pipe Observations:

Segment 1-

Pipe type: 18-inch CPEP

General Comments

- No defects observed,
- Video poor quality, due to geometry of existing manhole

Segment 2-

Pipe type: 12-inch CPEP

General Comments

- No defects observed

Segment 3-

Pipe type: 21-inch CPEP

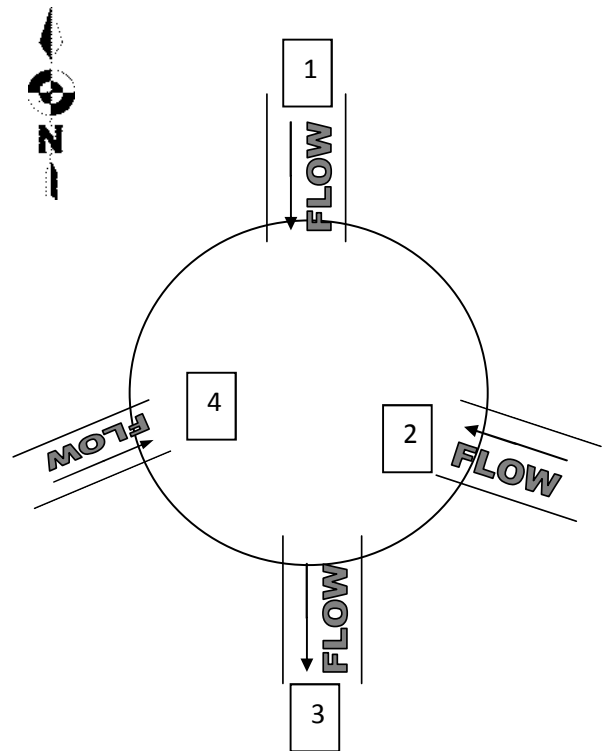
General Comments

- 3-inches of debris on invert

Segment 4-

Pipe type: 12-inch CPEP

General Comments



- No defects observed

32nd and 33rd Avenue Upgrades

SEWER MANHOLE INSPECTION REPORT

Manhole # **1631-004**

DATE, INSPECTOR(S), & LOCATION DATA

Date of Inspection: Wednesday, July 12, 2017

Inspector(s): Porter, Bailey

Atmosphere: O₂- N/A LEL- N/A H₂S- N/A CO- N/A

General Location Features: NE Corner of 33rd Avenue and Denali

PIPE CHARACTERISTICS

In-Effluent Pipe Size/Type/Diameter	Rim to Invert	Depth of Flow
1. 12-inch CPEP Effluent	31"	Min.

Depth of Sum, Depth of Debris in Sump: Too much debris

MANHOLE CHARACTERISTIC

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

Overall Structural Condition: 2.

Material of Construction: Precast

Manhole Shape: Circular

Dimensions: 48-inch

Cover/Lid: 22x17-inch lid, CI, with a grade score of 2

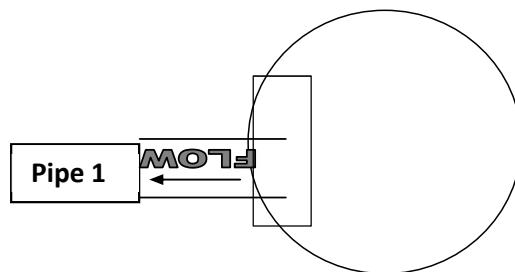
Frame: 7-inch tall, CI, with a grade score of 2

Reducing Slab: 1-8 inch with a grade score 1

Base: Too much debris, with a grade score 2

Effluent Pipe Connection: Effluent pipe connection grout is flaking and missing grout, effluent protrudes 3 inches, grade score of 4.

Additional Comment: slight crack





MH 1631-004 looking north



MH looking south



MH frame



12-inch effluent



effluent missing grout



manhole base and reducing slab



32ND AND 33RD Avenue Upgrades

Structure Number 1631-004

Pipe Inspection Results

Location of Storm Drain Structure: Northeast corner of 33rd Avenue and Denali

Camera type: Quickview Camera

Quickview camera can observe from 10 to 300 feet of pipe depending on existing pipe condition, slope, and diameter.

1

 Pipe viewing sequence number

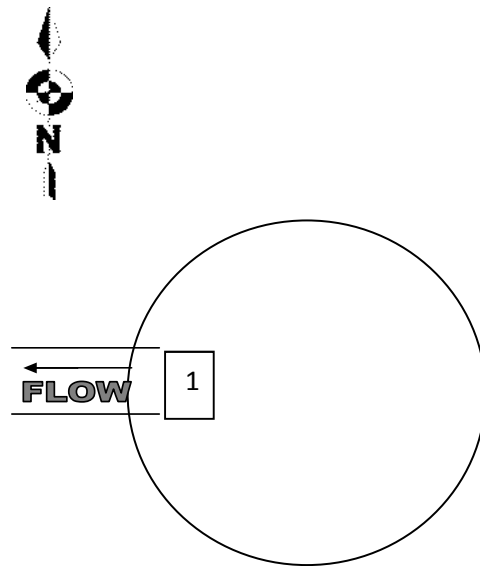
Pipe Observations:

Segment 1-

Pipe type: 12-inch CPEP

General Comments

- No defects observed



32nd and 33rd Avenue Upgrades

SEWER MANHOLE INSPECTION REPORT

Manhole # **1631-005**

DATE, INSPECTOR(S), & LOCATION DATA

Date of Inspection: Wednesday, July 12, 2017

Inspector(s): Porter, Bailey

Atmosphere: O₂- N/A LEL- N/A H₂S- N/A CO- N/A

General Location Features: SE Corner of 33rd Avenue and Denali

PIPE CHARACTERISTICS

In-Effluent Pipe Size/Type/Diameter	Rim to Invert	Depth of Flow
1. 12-inch CPEP Effluent	36"	Min.

Depth of Sum, Depth of Debris in Sump: Too much debris

MANHOLE CHARACTERISTIC

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

Overall Structural Condition: 2.

Material of Construction: Precast

Manhole Shape: Circular

Dimensions: 48-inch

Cover/Lid: 22x17-inch lid, CI, with a grade score of 2

Frame: 7-inch tall, CI, with a grade score of 2

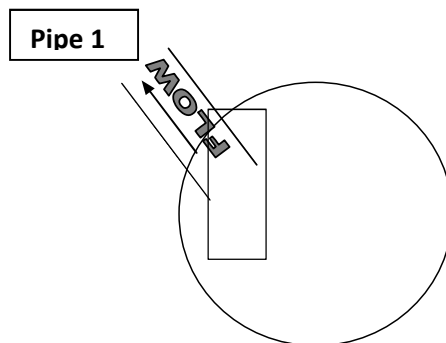
Chimney: 1-5 inch chimneys with a grade score of 2.

Reducing Slab: 1-8 inch with a grade score 1

Base: Too much debris, with a grade score 2

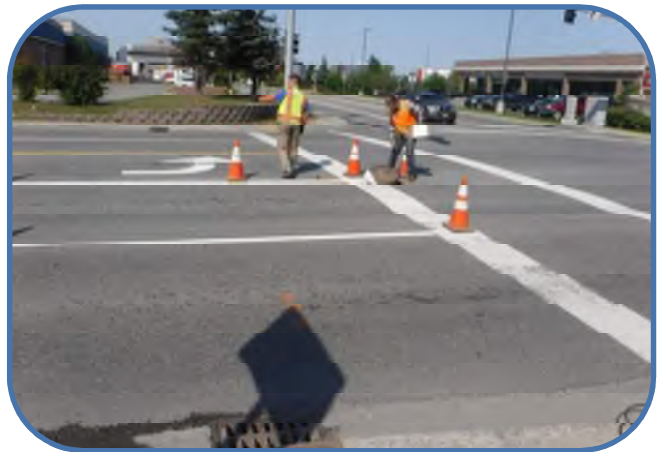
Effluent Pipe Connection: Effluent pipe connection grout is flaking and missing grout, effluent protrudes 6-inches, grade score of 3.

Additional Comment: Grade rings slightly offset





MH 1631-005 looking north



MH looking west



MH frame



12-inch effluent



effluent



missing grout



32ND AND 33RD Avenue Upgrades

Structure Number 1631-005

Pipe Inspection Results

Location of Storm Drain Structure: Southeast corner of 33rd Avenue and Denali

Camera type: Quickview Camera

Quickview camera can observe from 10 to 300 feet of pipe depending on existing pipe condition, slope, and diameter.

1 Pipe viewing sequence number

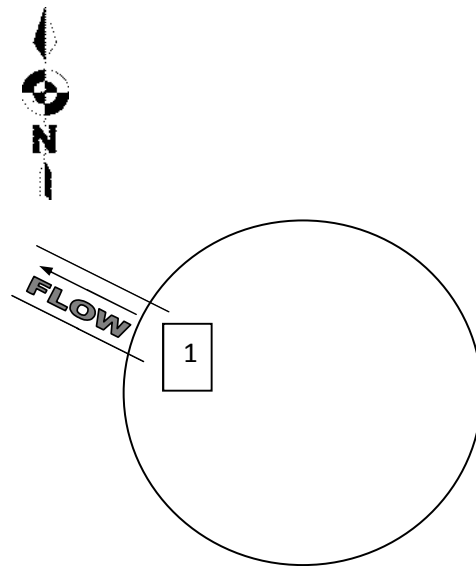
Pipe Observations:

Segment 1-

Pipe type: 12-inch CPEP

General Comments

- No defects observed



32nd and 33rd Avenue Upgrades

SEWER MANHOLE INSPECTION REPORT

Manhole # **1631-051**

DATE, INSPECTOR(S), & LOCATION DATA

Date of Inspection: Wednesday, July 12, 2017

Inspector(s): Porter, Bailey

Atmosphere: O₂- N/A LEL- N/A H₂S- N/A CO- N/A

General Location Features: East curbline in A street in front of Walmart

PIPE CHARACTERISTICS

In-Effluent Pipe Size/Type/Diameter	Rim to Invert	Depth of Flow
1. 12-inch Unknown Influent	46"	Min.
2. 18-inch CMP Effluent	46"	Min.

Depth of Sum, Depth of Debris in Sump: Too much debris

MANHOLE CHARACTERISTIC

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

Overall Structural Condition: 3.

Material of Construction: Cast in Place

Manhole Shape: Rectangular

Dimensions: 24x36 inch

Cover/Lid: 36x18-inch slotted, CI, with a grade score of 2

Frame: 7 inch tall, CI, with a grade score of 4

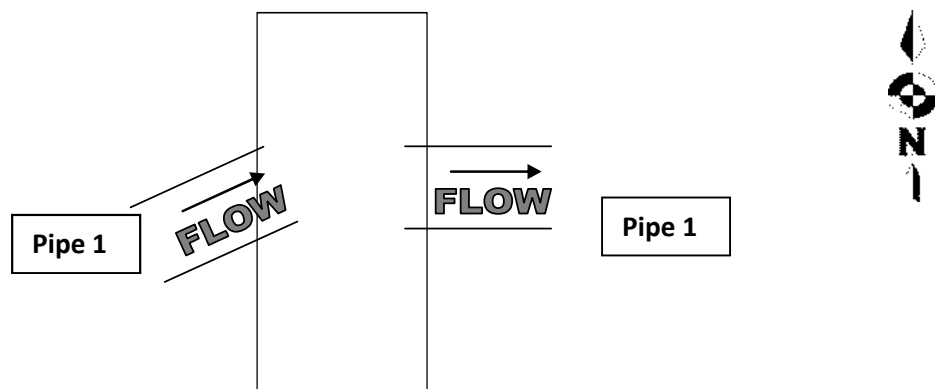
Chimney: Chimney poor condition too difficult to measure height due to the poor condition, grade score of 5

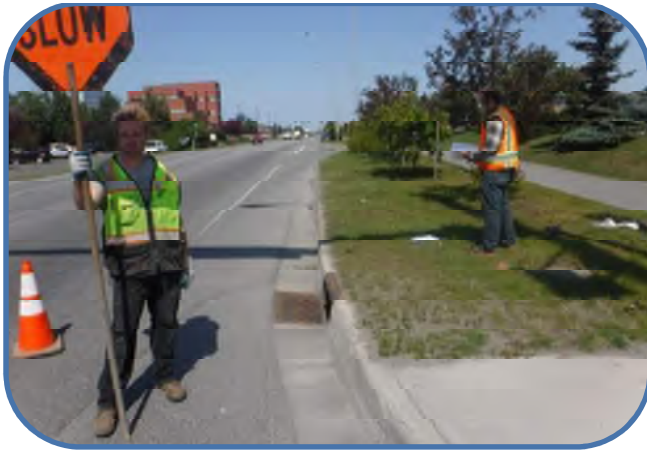
Base: Too much debris with a grade score of 2. Some surface spalling of concrete on base.

Influent Pipe Connection: 3-inch protrusion grout is good condition, grade score of 2.

Effluent Pipe Connection: 2-inch protrusion grout is good condition, grade score of 2.

Additional Comment: Pipe is likely a type of fiberglass polymer pipe. Frame is broken on the inlet see photos





MH 1631-051 looking north



broken frame



mh base



effluent pipe



influent pipe



chimney



32ND AND 33RD Avenue Upgrades

Structure Number 1631-051

Pipe Inspection Results

Location of Storm Drain Structure: Northeast intersection at Calais Drive and A Street in curblane of A street

Camera type: Quickview Camera

Quickview camera can observe from 10 to 300 feet of pipe depending on existing pipe condition, slope, and diameter.

1

Pipe viewing sequence number

Pipe Observations:

Segment 1-

Pipe type: 18-inch CMP

General Comments

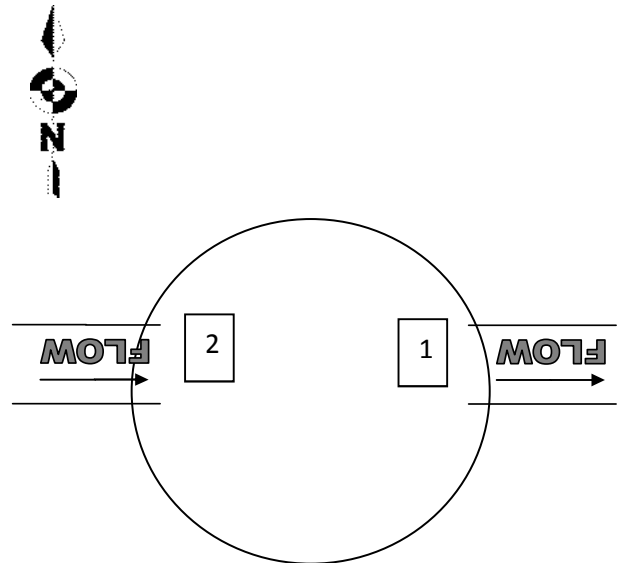
- No defects observed

Segment 1-

Pipe type: 18-inch CMP

General Comments

- Up to 2 inches of debris in invert



32nd and 33rd Avenue Upgrades

SEWER MANHOLE INSPECTION REPORT

Manhole # **1631-051A**

DATE, INSPECTOR(S), & LOCATION DATA

Date of Inspection: Wednesday, July 12, 2017

Inspector(s): Porter, Bailey

Atmosphere: O₂- N/A LEL- N/A H₂S- N/A CO- N/A

General Location Features: Northeast corner of A Street and Calais Drive

PIPE CHARACTERISTICS

In-Effluent Pipe Size/Type/Diameter	Rim to Invert	Depth of Flow
1. 21-inch Unknown Influent	55"	Min.
2. 15-inch CMP Influent	53"	Min.
3. 21-inch Unknown Influent	55"	Min.

Depth of Sum, Depth of Debris in Sump: Too much debris to determine

MANHOLE CHARACTERISTIC

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

Overall Structural Condition: 2.

Material of Construction: Precast

Manhole Shape: Circular

Dimensions: 48-inch

Cover/Lid: 25-inch lid, CI, with a grade score of 2

Frame: 7 inch tall, CI, with a grade score of 2

Chimney 2-4 inch chimneys, with a grade score of 4

Reducing Slab: 1-6 inch with a grade score 2

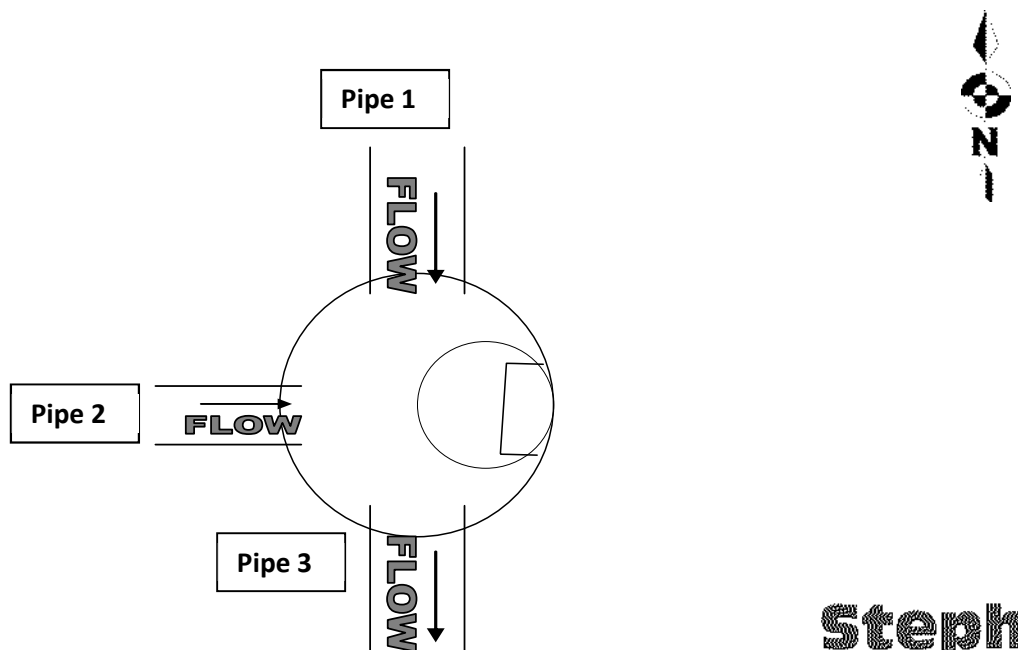
Steps: 2-metal with a grade score 2

Base: Too much debris to measure depth, with a grade score 2

Influent Pipe Connection: Influent pipe connection grout protrudes 3 inches, grade score of 2.

Effluent Pipe Connection: Effluent pipe connection protrudes 3 inches, grade score of 2.

Additional Comment: Chimney is in poor condition, pipe is likely a type of fiberglass polymer pipe





MH 1631-051A looking north



MH frame



chimney grouting



influent pipe



influent pipe



effluent pipe



32ND AND 33RD Avenue Upgrades

Structure Number 1631-051A

Pipe Inspection Results

Location of Storm Drain Structure: Northeast corner of Calais Drive and A street

Camera type: Quickview Camera

Quickview camera can observe from 10 to 300 feet of pipe depending on existing pipe condition, slope, and diameter.

1

Pipe viewing sequence number

Pipe Observations:

Segment 1-

Pipe type: 18-inch FRP

General Comments

- Pipe damaged between 10 o'clock and 1 o'clock position, see photo 1, root intrusion

Segment 2-

Pipe type: 18-inch CMP

General Comments

- No defects observed

Segment 2-

Pipe type: 18-inch FRP

General Comments

- Up to 3-inches of debris in invert

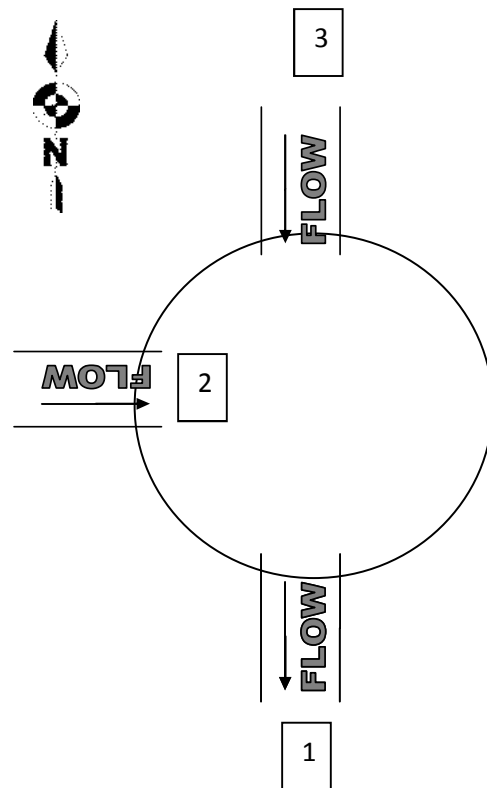




Photo 1-Root intrusion in pipe

32nd and 33rd Avenue Upgrades

SEWER MANHOLE INSPECTION REPORT

Manhole # **1631-089**

DATE, INSPECTOR(S), & LOCATION DATA

Date of Inspection: Wednesday, July 12, 2017

Inspector(s): Porter, Bailey

Atmosphere: O₂- N/A LEL- N/A H₂S- N/A CO- N/A

General Location Features: Northwest corner of 33rd Avenue and Denali

PIPE CHARACTERISTICS

In-Effluent Pipe Size/Type/Diameter	Rim to Invert	Depth of Flow
1. 12-inch CPEP Effluent	36"	1"
2. 6-inch CPEP Influent	30"	Min.

Depth of Sum, Depth of Debris in Sump: 12-inch sump, 6-inch debris

MANHOLE CHARACTERISTIC

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

Overall Structural Condition: 3.

Material of Construction: Precast

Manhole Shape: Circular

Dimensions: 48-inch

Cover/Lid: 22x17-inch lid, CI, with a grade score of 2

Frame: 7-inch tall, CI, with a grade score of 2

Chimney 1-3 inch tall, CI, with a grade score of 2

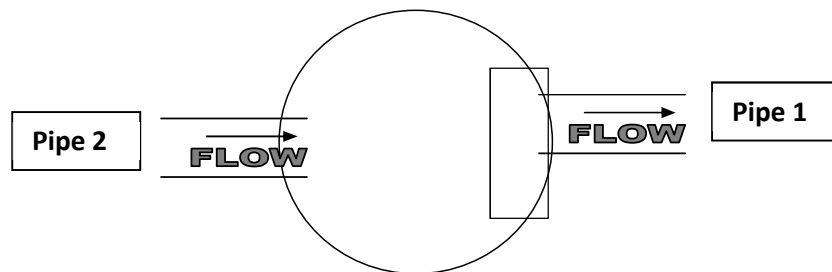
Reducing Slab: 1-8 inch with a grade score 1

Base: 36-inches, with a grade score 3

Influent Pipe Connection: Influent pipe connection grout is flaking and missing grout, protrudes 4 inches, grade score of 4.

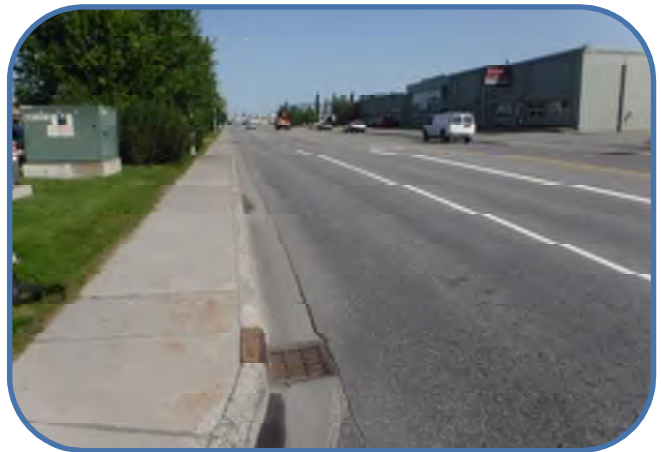
Effluent Pipe Connection: Effluent pipe connection grout is flaking and missing grout, effluent protrudes 6 inches, grade score of 3.

Additional Comment: Grout missing on chimney, cracks in base





MH 1631-089 looking south



MH looking north



MH frame



12-inch effluent



effluent cracked grout



6-inch influent



32ND AND 33RD Avenue Upgrades

Structure Number 1631-089

Pipe Inspection Results

Location of Storm Drain Structure: Northwest corner of 33rd and Denali Street

Camera type: Quickview Camera

Quickview camera can observe from 10 to 300 feet of pipe depending on existing pipe condition, slope, and diameter.

1

 Pipe viewing sequence number

Pipe Observations:

Segment 1-

Pipe type: 18-inch CPEP

General Comments

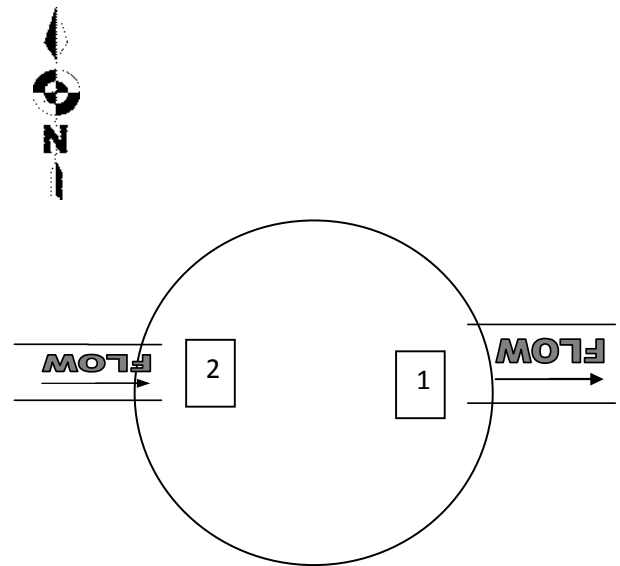
- 2-inches of debris in invert

Segment 2-

Pipe type: 6-inch CPEP

General Comments

- Alignment of 6-inch made inspection difficult. Very little of pipe inspected



32nd and 33rd Avenue Upgrades

SEWER MANHOLE INSPECTION REPORT

Manhole # **1631-090**

DATE, INSPECTOR(S), & LOCATION DATA

Date of Inspection: Wednesday, July 12, 2017

Inspector(s): Porter, Bailey

Atmosphere: O₂- N/A LEL- N/A H₂S- N/A CO- N/A

General Location Features: Centerline manhole in eastbound lane of Calais Drive west of Walmart entrance

PIPE CHARACTERISTICS

In-Effluent Pipe Size/Type/Diameter	Rim to Invert	Depth of Flow
1. 18-inch CPEP Influent	51"	Min.
2. 18inch CPEP Effluent	51"	Min.

Depth of Sum, Depth of Debris in Sump: Too much debris to determine

MANHOLE CHARACTERISTIC

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

Overall Structural Condition: 2.

Material of Construction: Precast

Manhole Shape: Circular

Dimensions: 48-inch

Cover/Lid: 25-inch lid, CI, with a grade score of 2

Frame: 3-inch tall, CI, with a grade score of 2

Chimney 1-6 inch chimneys, with a grade score of 3

Reducing Slab: 1-9 inch with a grade score 2

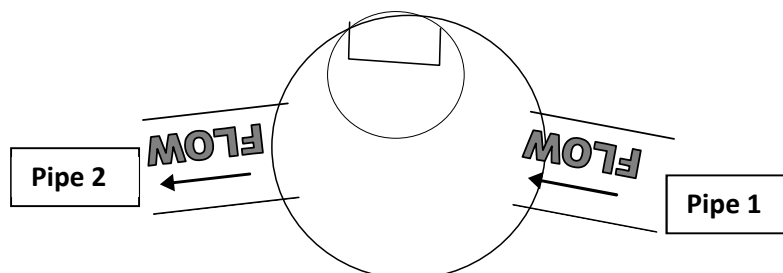
Steps: 3 metal with a grade score 2

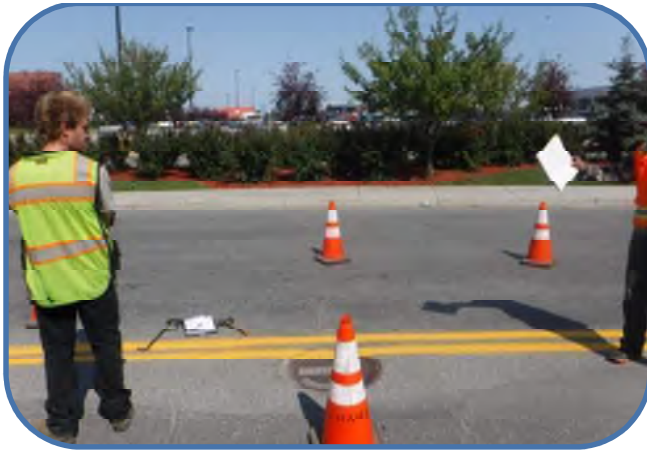
Base: Too much debris to measure depth, with a grade score 2

Influent Pipe Connection: Influent pipe connection grout protrudes 1 inches, grade score of 2.

Effluent Pipe Connection: Effluent pipe connection protrudes 2 inches, grade score of 2.

Additional Comment: influent pipe is broken between 11 and 3 o'clock, cracks in chimneys.





MH 1631-090 looking north



MH looking east



mh cover



grout cracked



effluent pipe



influent pipe



32ND AND 33RD Avenue Upgrades

Structure Number 1631-090

Pipe Inspection Results

Location of Storm Drain Structure: Calais Drive Center MH west of Walmart entrance

Camera type: Quickview Camera

Quickview camera can observe from 10 to 300 feet of pipe depending on existing pipe condition, slope, and diameter.

1

 Pipe viewing sequence number

Pipe Observations:

Segment 1-

Pipe type: 18-inch CPEP

General Comments

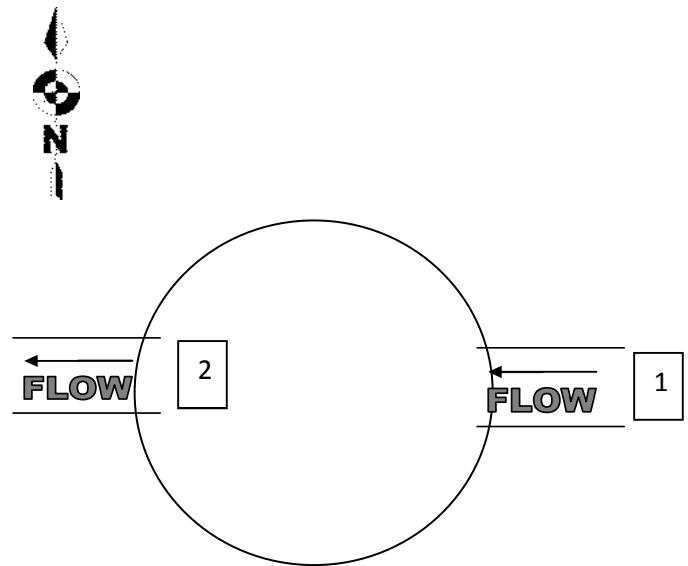
- Pipe damaged at pipe connection between 11 o'clock and 1 o'clock position, see photo 1

Segment 2-

Pipe type: 18-inch CPEP

General Comments

- Ovality observed in pipe, approximately 5%, See photo 2



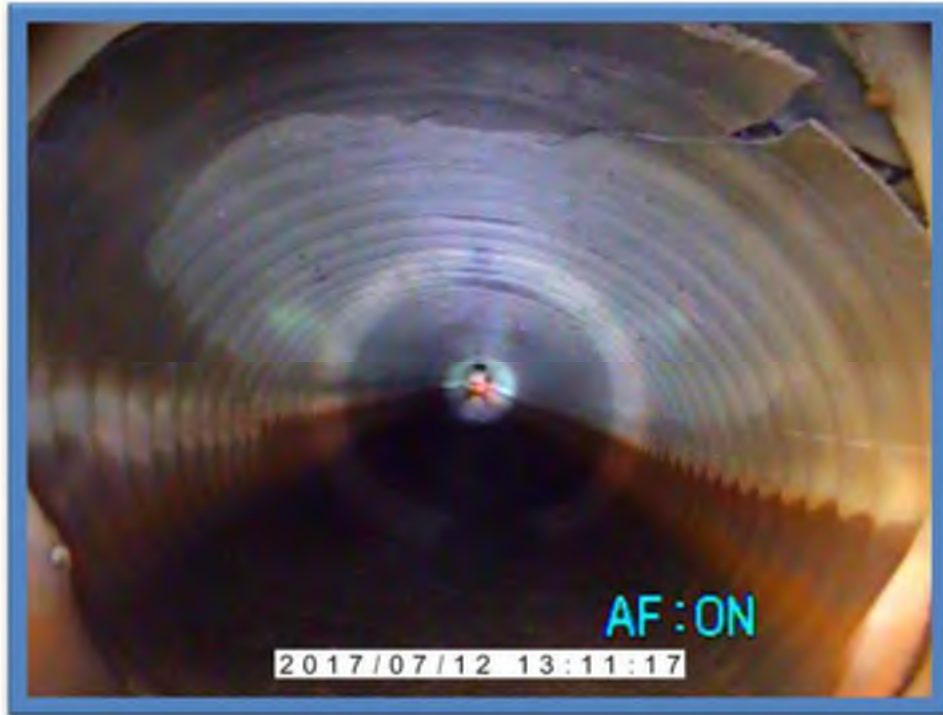


Photo 1-Pipe damage at crown of pipe at manhole connection



Photo 1-Ovality in pipe section near manhole 1631-132

32nd and 33rd Avenue Upgrades

SEWER MANHOLE INSPECTION REPORT

Manhole # **1631-091**

DATE, INSPECTOR(S), & LOCATION DATA

Date of Inspection: Wednesday, July 12, 2017

Inspector(s): Porter, Bailey

Atmosphere: O₂- N/A LEL- N/A H₂S- N/A CO- N/A

General Location Features: Calais Drive Center MH Midtown Place

PIPE CHARACTERISTICS

In-Effluent Pipe Size/Type/Diameter	Rim to Invert	Depth of Flow
1. 12-inch CPEP Influent	53"	Min.
2. 12-inch CPEP Influent	53"	Min.
3. 12-inch CPEP Influent	53"	Min.
4. 12-inch CPEP Influent	53"	Min.
5. 12-inch CPEP Influent	51"	Min.
6. 18-inch CPEP Effluent	55"	Min.

Depth of Sum, Depth of Debris in Sump: 12 inch-minimal debris

MANHOLE CHARACTERISTIC

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

Overall Structural Condition: 2.

Material of Construction: Precast

Manhole Shape: Circular

Dimensions: 48-inch

Cover/Lid: 25-inch lid, CI, with a grade score of 2

Frame: 7 inch tall, CI, with a grade score of 2

Chimney 1- chimneys totaling 7 inches in height, CI, with a grade score of 2

Reducing Slab: 1-9 inch with a grade score 2

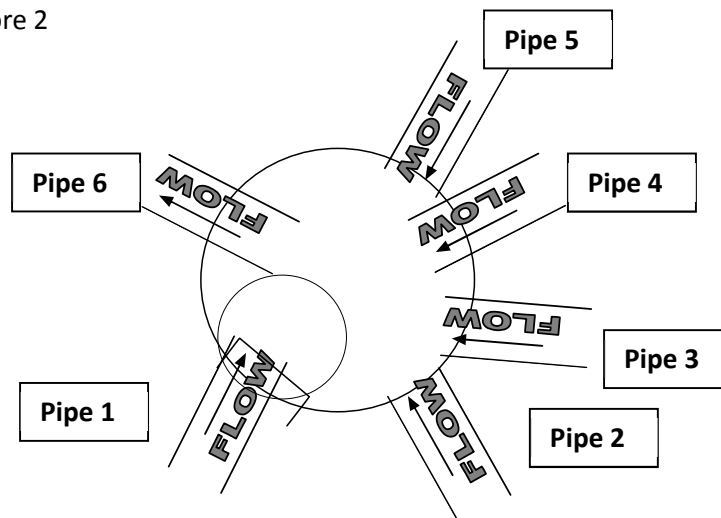
Steps: 1 metal with a grade score 2

Base: 1-46 inch tall base, with a grade score 3, cracks in base between pipe connections

Influent Pipe Connection: Influent pipe connection grout is flaking and missing grout, protrusion varies between 2 and 3 inches, grade score of 3.

Effluent Pipe Connection: Effluent pipe connection grout is flaking and missing grout, protrudes 3 inches, grade score of 3.

Additional Comment: Small amount of corrosion on frame and steps





MH 1631-091 looking north



MH looking east



MH frame



12-inch influent pipes



influent pipes



effluent pipe



32ND AND 33RD Avenue Upgrades

Structure Number 1631-091

Pipe Inspection Results

Location of Storm Drain Structure: Calais Drive Center MH Midtown Place

Camera type: Quickview Camera

Quickview camera can observe from 10 to 300 feet of pipe depending on existing pipe condition, slope, and diameter.

1 Pipe viewing sequence number

Pipe Observations:

Segment 1-

Pipe type: 12-inch CPEP

General Comments

- No defects observed

Segment 2-

Pipe type: 12-inch CPEP

General Comments

- No defects observed

Segment 3-

Pipe type: 12-inch CPEP

General Comments

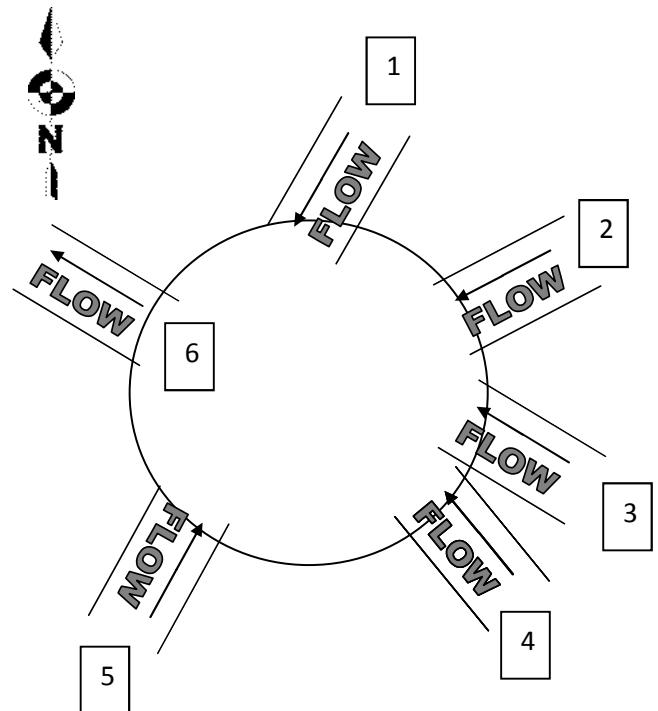
- No defects observed

Segment 4-

Pipe type: 12-inch CPEP

General Comments

- No defects observed



Segment 5-

Pipe type: 12-inch CPEP

General Comments

- No defects observed

Segment 6-

Pipe type: 18-inch CPEP

General Comments

- Approximately 5% ovality observed in pipe

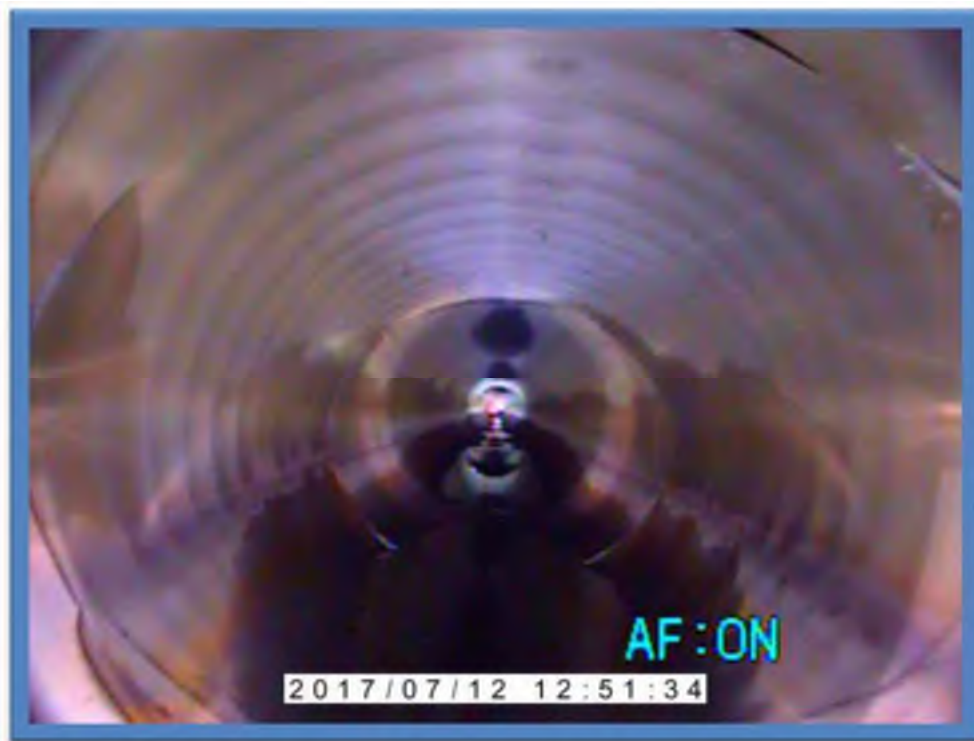


Photo 1-Ovality in pipe segment. Pipe deformed down. Ovality is approximately 5%

32nd and 33rd Avenue Upgrades

SEWER MANHOLE INSPECTION REPORT

Manhole # **1631-092**

DATE, INSPECTOR(S), & LOCATION DATA

Date of Inspection: Wednesday, July 12, 2017

Inspector(s): Porter, Bailey

Atmosphere: O₂- N/A LEL- N/A H₂S- N/A CO- N/A

General Location Features: Calais Drive to the west of Midtown Place

PIPE CHARACTERISTICS

In-Effluent Pipe Size/Type/Diameter	Rim to Invert	Depth of Flow
1. 18-inch CPEP Influent	53"	Min.
2. 18-inch CPEP Influent	53"	Min.

Depth of Sum, Depth of Debris in Sump: 12 inch-minimal Debris

MANHOLE CHARACTERISTIC

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

Overall Structural Condition: 2.

Material of Construction: Precast

Manhole Shape: Circular

Dimensions: 48-inch

Cover/Lid: 25-inch lid, CI, with a grade score of 2

Frame: 3-inch tall, CI, with a grade score of 2

Chimney 2-chimneys totaling 8-inches in height, CI, with a grade score of 3

Reducing Slab: 1-9 inch with a grade score 2, cracks in grade rings and reducing slab.

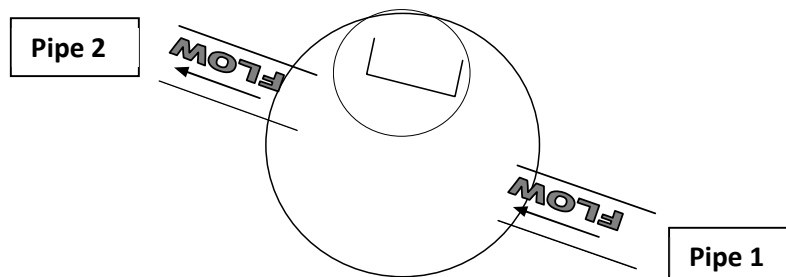
Steps: 3 metal with a grade score 2

Base: Too much debris, with a grade score of 2, small cracks

Influent Pipe Connection: Influent pipe connection grout is flaking and missing grout, protrusion 3 inches, grade score of 3.

Effluent Pipe Connection: Effluent pipe connection grout is flaking and missing grout, protrudes 3 inches, grade score of 3.

Additional Comment: Small amount of corrosion on frame and steps





MH 1631-092 looking north



MH frame



cracked chimney



effluent pipe



influent pipes



metal steps



32ND AND 33RD Avenue Upgrades

Structure Number 1631-092

Pipe Inspection Results

Location of Storm Drain Structure: Calais Drive Center MH to the west of Midtown Place

Camera type: Quickview Camera

Quickview camera can observe from 10 to 300 feet of pipe depending on existing pipe condition, slope, and diameter.

1

Pipe viewing sequence number

Pipe Observations:

Segment 1-

Pipe type: 18-inch CPEP

General Comments

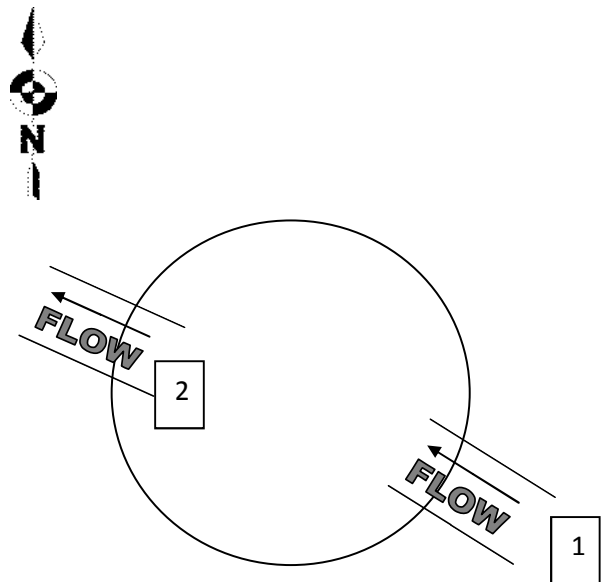
- Ovality observed. See CCTV Log 1631-091 for photo of ovality

Segment 2-

Pipe type: 18-inch CPEP

General Comments

- No defects observed



32nd and 33rd Avenue Upgrades

SEWER MANHOLE INSPECTION REPORT

Manhole # **1631-093**

DATE, INSPECTOR(S), & LOCATION DATA

Date of Inspection: Tuesday, July 11, 2017

Inspector(s): Porter, Bailey

Atmosphere: O₂- N/A LEL- N/A H₂S- N/A CO- N/A

General Location Features: 32nd Avenue Eastbound in front of Residential Mortgage

PIPE CHARACTERISTICS

In-Effluent Pipe Size/Type/Diameter	Rim to Invert	Depth of Flow
1. 12-inch CPEP Effluent	40"	Min.

Depth of Sum, Depth of Debris in Sump: Too much debris

MANHOLE CHARACTERISTIC

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

Overall Structural Condition: 2.

Material of Construction: Precast

Manhole Shape: Circular

Dimensions: 48-inch

Cover/Lid: 22x18-inch, CI, with a grade score of 2

Frame: 7-inch tall, CI, with a grade score of 2

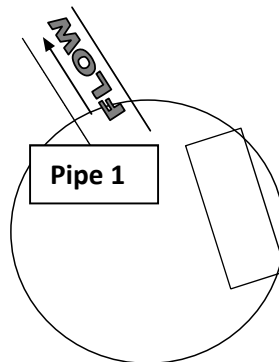
Chimney: 7-inches of chimneys with a grade score of 2

Reducing slab: 1-6 inch with a grade score of 1

Base: Too much debris to measure with a grade score of 1.

Effluent Pipe Connection: 4-inch protrusion grout is grade score of 3. Grout cracked on effluent see photos

Additional Comment: Frame is offset 5 inches from chimneys see photos





MH 1631-093 looking north east



MH frame and inlet



offset frame from riser



grade rings



grout cracked on effluent pipe



base



32ND AND 33RD Avenue Upgrades

Structure Number 1631-093

Pipe Inspection Results

Location of Storm Drain Structure: Eastbound lane of Calais Drive across from Walmart

Camera type: Quickview Camera

Quickview camera can observe from 10 to 300 feet of pipe depending on existing pipe condition, slope, and diameter.

1

 Pipe viewing sequence number

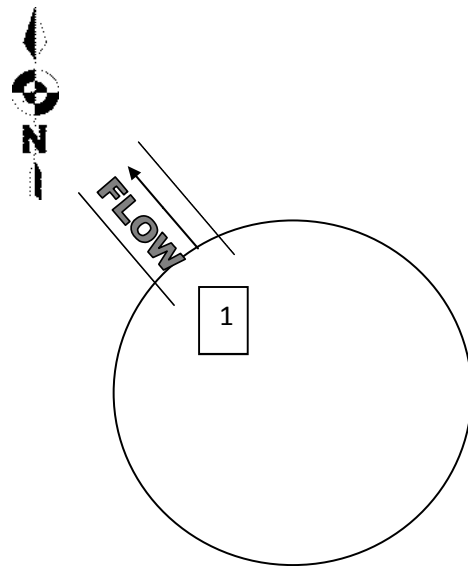
Pipe Observations:

Segment 1-

Pipe type: 12-inch CPEP

General Comments

- Horizontal deflection in pipe
- No defects observed



32nd and 33rd Avenue Upgrades

SEWER MANHOLE INSPECTION REPORT

Manhole # **1631-094**

DATE, INSPECTOR(S), & LOCATION DATA

Date of Inspection: Tuesday, July 11, 2017

Inspector(s): Porter, Bailey

Atmosphere: O₂- N/A LEL- N/A H₂S- N/A CO- N/A

General Location Features: Northeast Corner at intersection of Walmart and Calais Drive

PIPE CHARACTERISTICS

In-Effluent Pipe Size/Type/Diameter	Rim to Invert	Depth of Flow
1. 12-inch CPEP Effluent	39"	Min.

Depth of Sum, Depth of Debris in Sump: Too much debris

MANHOLE CHARACTERISTIC

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

Overall Structural Condition: 2.

Material of Construction: Precast

Manhole Shape: Circular

Dimensions: 48-inch

Cover/Lid: 22x18-inch, CI, with a grade score of 2

Frame: 7-inch tall, CI, with a grade score of 2

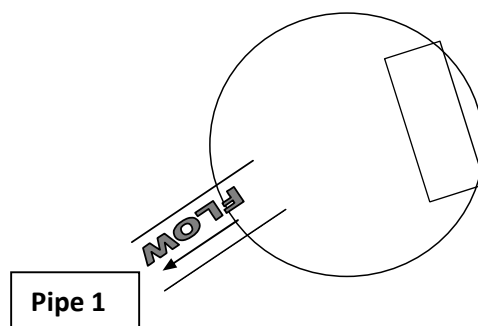
Chimney: 11-inches of chimneys, with a grade score of 2

Reducing slab: 1-6 inch with a grade score of 2

Base: Too much debris to measure, with a grade score of 2.

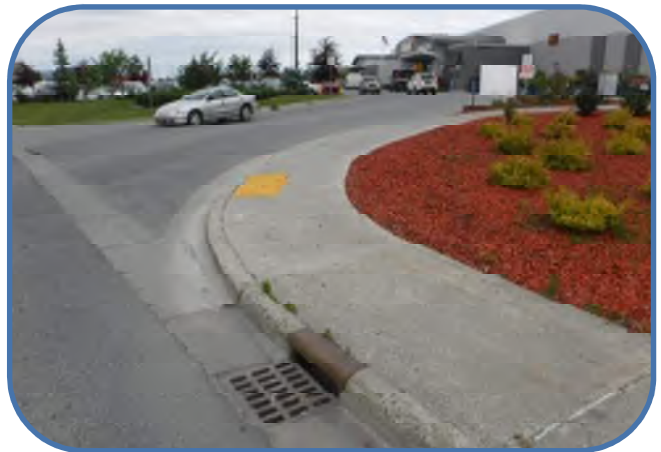
Effluent Pipe Connection: 3-inch protrusion, grade score of 2

Additional Comment: slightly offset chimney from frame





MH 1631-094 looking north east



MH looking north



MH frame and inlet



grade rings



grout cracked between risers



effluent pipe



32ND AND 33RD Avenue Upgrades

Structure Number 1631-094

Pipe Inspection Results

Location of Storm Drain Structure: Westbound lane of Calais drive across from Walmart

Camera type: Quickview Camera

Quickview camera can observe from 10 to 300 feet of pipe depending on existing pipe condition, slope, and diameter.

1	Pipe viewing sequence number
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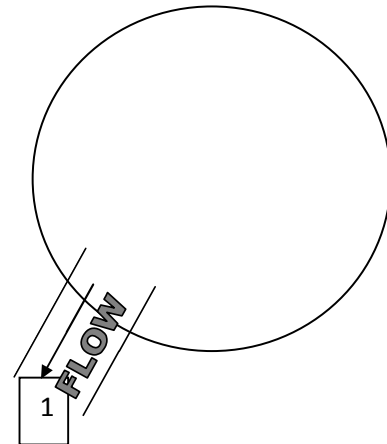
Pipe Observations:

Segment 1-

Pipe type: 12-inch CPEP

General Comments

- 3-inches of debris in invert



32nd and 33rd Avenue Upgrades

SEWER MANHOLE INSPECTION REPORT

Manhole # **1631-097**

DATE, INSPECTOR(S), & LOCATION DATA

Date of Inspection: Wednesday, July 12, 2017

Inspector(s): Porter, Bailey

Atmosphere: O₂- N/A LEL- N/A H₂S- N/A CO- N/A

General Location Features: Southwest corner 33rd Avenue and Denali

PIPE CHARACTERISTICS

In-Effluent Pipe Size/Type/Diameter	Rim to Invert	Depth of Flow
1. 12-inch CPEP Effluent	35"	Min.

Depth of Sum, Depth of Debris in Sump: too much debris

MANHOLE CHARACTERISTIC

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

Overall Structural Condition: 2.

Material of Construction: Precast

Manhole Shape: Circular

Dimensions: 48-inch

Cover/Lid: 22x17-inch lid, CI, with a grade score of 2

Frame: 7-inch tall, CI, with a grade score of 2

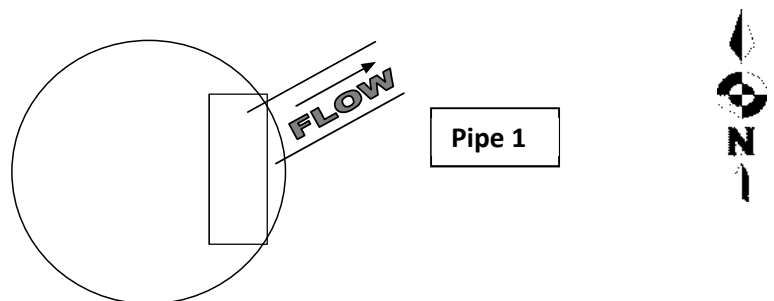
Chimney 1-2 inch tall, CI, with a grade score of 3

Reducing Slab: 1-8 inch with a grade score 1

Base: Too much debris, with a grade score 2

Effluent Pipe Connection: Effluent pipe connection grout is missing, protrudes 4 inches, grade score of 3.

Additional Comment: Missing metal on frame.





MH 1631-089 looking south



MH looking north



MH frame



12-inch effluent



effluent cracked grout



6-inch influent



32ND AND 33RD Avenue Upgrades

Structure Number 1631-097

Pipe Inspection Results

Location of Storm Drain Structure: Southwest corner of 33rd and Denali Street

Camera type: Quickview Camera

Quickview camera can observe from 10 to 300 feet of pipe depending on existing pipe condition, slope, and diameter.

1

 Pipe viewing sequence number

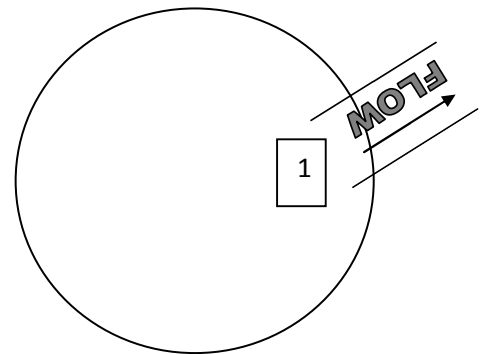
Pipe Observations:

Segment 1-

Pipe type: 12-inch CPEP

General Comments

- No defects



32nd and 33rd Avenue Upgrades

SEWER MANHOLE INSPECTION REPORT

Manhole # **1631-131**

DATE, INSPECTOR(S), & LOCATION DATA

Date of Inspection: Wednesday, July 12, 2017

Inspector(s): Porter, Bailey

Atmosphere: O₂- N/A LEL- N/A H₂S- N/A CO- N/A

General Location Features: West bound lane of traffic in Calais Drive in front of Walmart

PIPE CHARACTERISTICS

In-Effluent Pipe Size/Type/Diameter	Rim to Invert	Depth of Flow
1. 12-inch CPEP Influent	26"	Min.

Depth of Sum, Depth of Debris in Sump: 18-inch sump with 4 to 5 inches of debris

MANHOLE CHARACTERISTIC

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

Overall Structural Condition: 2.

Material of Construction: Precast

Manhole Shape: Circular

Dimensions: 48-inch

Cover/Lid: 22x17-inch lid, CI, with a grade score of 2

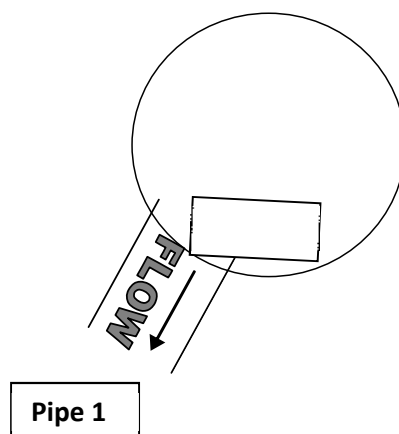
Frame: 7-inch tall, CI, with a grade score of 2

Reducing Slab: 1-4 inch with a grade score 2

Base: 1-32 inch, with a grade score 2

Effluent Pipe Connection: Effluent pipe connection grout is in good condition. Grade score of 1.

Additional Comment: 12-inch CPEP connects to 18-inch CMP pipe in Calais Drive not manhole 1631-132





MH 1631-131 looking north



MH frame



effluent pipe



effluent pipe



effluent pipe



manhole base



32ND AND 33RD Avenue Upgrades

Structure Number 1631-131

Pipe Inspection Results

Location of Storm Drain Structure: Northeast intersection at Calais Drive and A Street

Camera type: Quickview Camera

Quickview camera can observe from 10 to 300 feet of pipe depending on existing pipe condition, slope, and diameter.

1

Pipe viewing sequence number

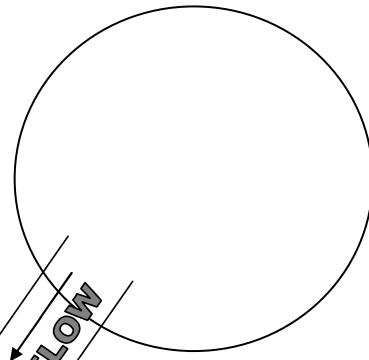
Pipe Observations:

Segment 1-

Pipe type: 12-inch CPEP

General Comments

- Grade break in pipe.
- Alignment change in pipe. See Photo 1.
- Pipe section ties directly into 18-inch CPEP that runs between MH 1631-132 and 1631-090



1



Photo 1-Grade break in pipe resulting in debris buildup. Also pipe changes alignment and deflects to the southeast. Pipe section ties directly into 18-inch CPEP pipe.

32nd and 33rd Avenue Upgrades

SEWER MANHOLE INSPECTION REPORT

Manhole # **1631-132**

DATE, INSPECTOR(S), & LOCATION DATA

Date of Inspection: Wednesday, July 12, 2017

Inspector(s): Porter, Bailey

Atmosphere: O₂- N/A LEL- N/A H₂S- N/A CO- N/A

General Location Features: A Street and 32nd Avenue mid intersection

PIPE CHARACTERISTICS

In-Effluent Pipe Size/Type/Diameter	Rim to Invert	Depth of Flow
1. 21-inch Unknown Influent	50"	Min.
2. 12-inch CPEP Influent	47"	Min.
3. 18 inch CMP Influent	50"	Min.
4. 21-inch Unknown Effluent	51"	Min.

Depth of Sum, Depth of Debris in Sump: Too much debris to determine

MANHOLE CHARACTERISTIC

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

Overall Structural Condition: 2.

Material of Construction: Precast

Manhole Shape: Circular

Dimensions: 48-inch

Cover/Lid: 25-inch lid, CI, with a grade score of 2

Frame: 7-inch tall, CI, with a grade score of 2

Chimney 1-4 inch chimney, with a grade score of 2

Reducing Slab: 1-9 inch with a grade score 2

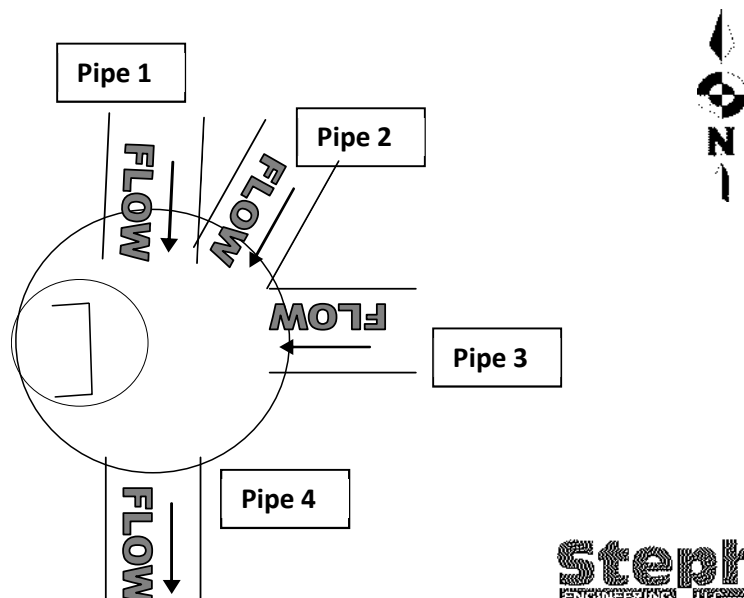
Steps: 3 metal with a grade score 2

Base: Too much debris to measure depth, with a grade score 4

Influent Pipe Connection: Influent pipe connection protrudes 2-4 inches, grout flaking and missing, grade score of 3.

Effluent Pipe Connection: Effluent pipe connection protrudes 6 inches, grade score of 2.

Additional Comment: Pipe 2 runs to northeast. Could not find where it goes to surface.





MH 1631-132 looking north



MH frame



steps



influent pipe to north



influent pipes, 12-inch CPEP could not find end on surface or with quickview



effluent pipe and crack in base



32ND AND 33RD Avenue Upgrades

Structure Number 1631-132

Pipe Inspection Results

Location of Storm Drain Structure: Middle of intersection at Calais Drive and A Street

Camera type: Quickview Camera

Quickview camera can observe from 10 to 300 feet of pipe depending on existing pipe condition, slope, and diameter.

1

Pipe viewing sequence number

Pipe Observations:

Segment 1-

Pipe type: 18-inch FRP

General Comments

- Multiple holes in pipe. See photos 1 and 2.

Segment 2-

Pipe type: 18-inch CMP

General Comments

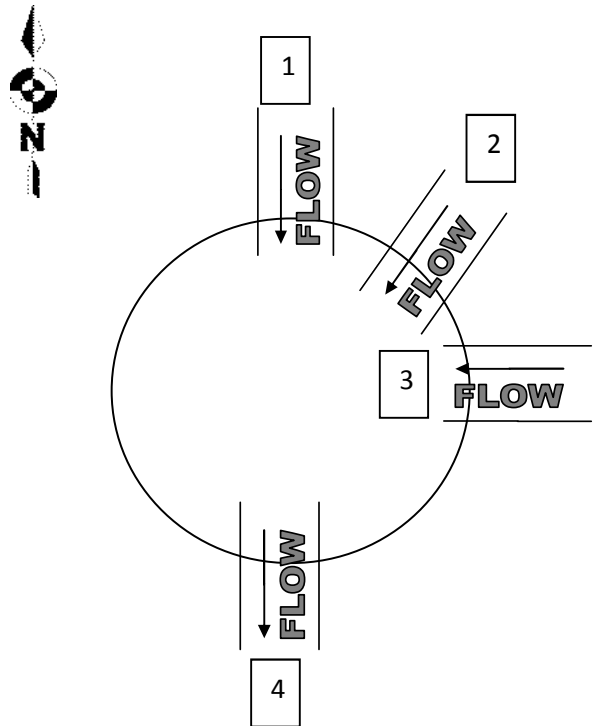
- No Defects Observed

Segment 3-

Pipe type: 18-inch CMP

General Comments

- Service pipe observed tapped in side of pipe. See photo 3.
- Pipe transitions to CPEP about 15 feet to east of manhole.



Segment 4-

Pipe type: 18-inch FRP

General Comments

- Hole in pipe at 8 o'clock position. See photo 4.
- Root infiltration between 11 o'clock and 1 o'clock position. See photo 5.



Photo 1-Hole in pipe



Photo 2-Holes in pipe and root intrusion



Photo 3-Service pipe connecting to pipe.

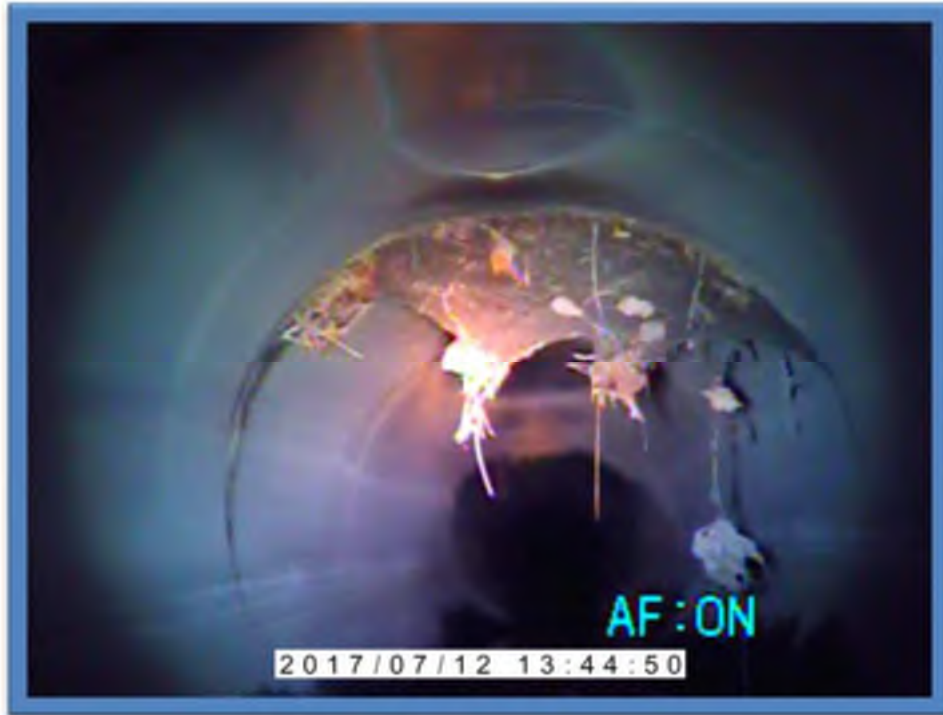


Photo 4-Holes in crown of pipe between 10 and 2 o'clock



Photo 5-Hole in pipe at 10 o'clock position

32nd and 33rd Avenue Upgrades

SEWER MANHOLE INSPECTION REPORT

Manhole # **1631-140**

DATE, INSPECTOR(S), & LOCATION DATA

Date of Inspection: Wednesday, July 12, 2017

Inspector(s): Porter, Bailey

Atmosphere: O₂- N/A LEL- N/A H₂S- N/A CO- N/A

General Location Features: Center MH in eastbound lane of Calais in front of Midtown Place

PIPE CHARACTERISTICS

In-Effluent Pipe Size/Type/Diameter	Rim to Invert	Depth of Flow
1. 12-inch CPEP Influent	47"	Min.
2. 12-inch CPEP Effluent	49"	Min.

Depth of Sum, Depth of Debris in Sump: Too much debris

MANHOLE CHARACTERISTIC

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

Overall Structural Condition: 2.

Material of Construction: Precast

Manhole Shape: Circular

Dimensions: 48-inch

Cover/Lid: 25-inch lid, CI, with a grade score of 2

Frame: 7 inch tall, CI, with a grade score of 2

Chimney 3-6 chimneys totaling 18 inches in height, CI, with a grade score of 2

Reducing Slab: 1-9 inch with a grade score 2

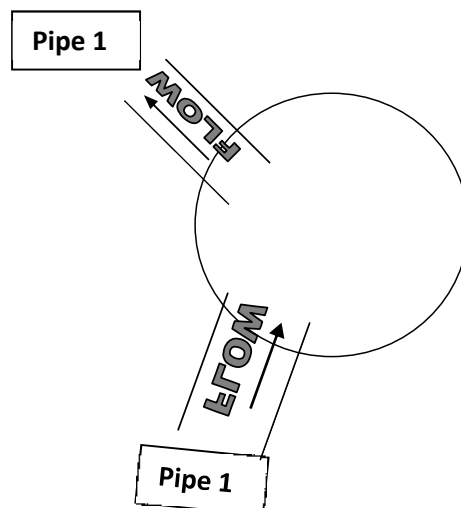
Steps: 1 poly with a grade score 4

Base: Too much debris, with a grade score 2

Influent Pipe Connection: Influent pipe connection grout is flaking and missing grout, protrudes 3 inches, grade score of 2.

Effluent Pipe Connection: Effluent pipe connection grout is flaking and missing grout, protrudes 3 inches, grade score of 3.

Additional Comment: Step is too far down to be of use





MH 1631-140 looking west



step photo taken looking north



effluent



12-inch influent



influent with cracked grout



32ND AND 33RD Avenue Upgrades

Structure Number 1631-140

Pipe Inspection Results

Location of Storm Drain Structure: Center MH in eastbound lane of Calais Drive in front of Midtown Place

Camera type: Quickview Camera

Quickview camera can observe from 10 to 300 feet of pipe depending on existing pipe condition, slope, and diameter.

1

Pipe viewing sequence number

Pipe Observations:

Segment 1-

Pipe type: 12-inch CPEP

General Comments

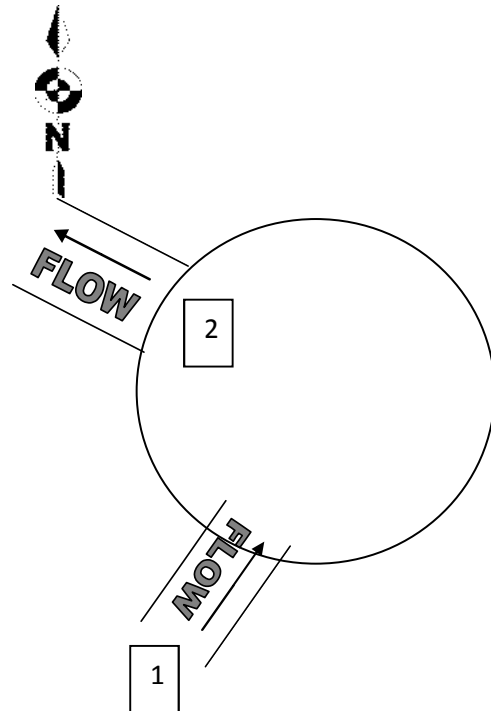
- No defects observed

Segment 2-

Pipe type: 12-inch CPEP

General Comments

- Small grade breaks in pipe throughout alignment



32nd and 33rd Avenue Upgrades

SEWER MANHOLE INSPECTION REPORT

Manhole # **1631-165**

DATE, INSPECTOR(S), & LOCATION DATA

Date of Inspection: Wednesday, July 12, 2017

Inspector(s): Porter, Bailey

Atmosphere: O₂- N/A LEL- N/A H₂S- N/A CO- N/A

General Location Features: Center MH northside of 33rd and Denali

PIPE CHARACTERISTICS

In-Effluent Pipe Size/Type/Diameter	Rim to Invert	Depth of Flow
1. 18-inch CPEP Influent	52"	2-inches.
2. 12-inch CPEP Influent	50"	Min.
3. 18-inch CPEP Effluent	52"	2-inches.
4. 12-inch CPEP Influent	47"	Min.

Depth of Sum, Depth of Debris in Sump: 12-inch sump with 2-4-inches of debris

MANHOLE CHARACTERISTIC

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

Overall Structural Condition: 4.

Material of Construction: Precast

Manhole Shape: Circular

Dimensions: 48-inch

Cover/Lid: 25-inch lid, CI, with a grade score of 2

Frame: 2-8 inch tall, CI, with a grade score of 2

Chimney: 2 chimneys totaling 11 inch with a grade score of 2.

Steps: 1-poly steps, with a grade score of 4.

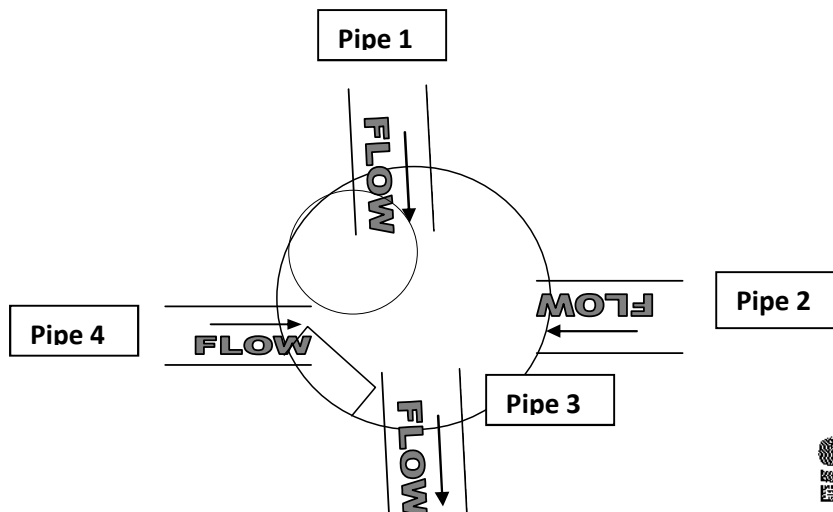
Reducing Slab: 1-8 inch with a grade score 1

Base: 1-38-inch with a grade score 4 multiple cracks in the base see photos

Influent Pipe Connection: Influent pipe connection is grouted but grout is flaking and missing, pipe 1 protrudes 6 -inches, pipe 2 and 4 protrude 2 inches, grade score of 4.

Effluent Pipe Connection: Effluent pipe connection grout is flaking, effluent protrudes 6 inches, grade score of 2.

Additional Comment: step is not in a location where it can be used in manhole, small cracks in chimneys



Steph
ENGINEERING



MH 1631-165 looking north



MH looking south



MH frame



18-inch influent grout missing soil visible



influent 12-inch pipe cracked



effluent 18-inch pipe cracked



32ND AND 33RD Avenue Upgrades

Structure Number 1631-165

Pipe Inspection Results

Location of Storm Drain Structure: Center MH northside of 33rd and Denali

Camera type: Quickview Camera

Quickview camera can observe from 10 to 300 feet of pipe depending on existing pipe condition, slope, and diameter.

1

Pipe viewing sequence number

Pipe Observations:

Segment 1-

Pipe type: 18-inch CPEP

General Comments

- 2-inches of debris in invert
- Ovality in pipe. Approximately 5% see photo

1

Segment 2-

Pipe type: 12-inch CPEP

General Comments

- No defects observed

Segment 3-

Pipe type: 18-inch CPEP

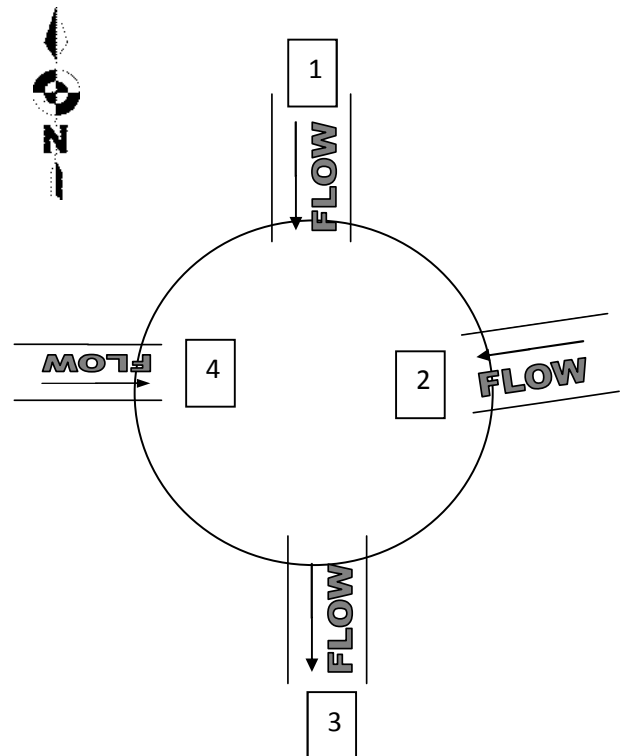
General Comments

- 3-inches of debris on invert

Segment 4-

Pipe type: 12-inch CPEP

General Comments



- 2-inches of debris in invert of pipe



Photo 1-Ovality in CPEP pipe