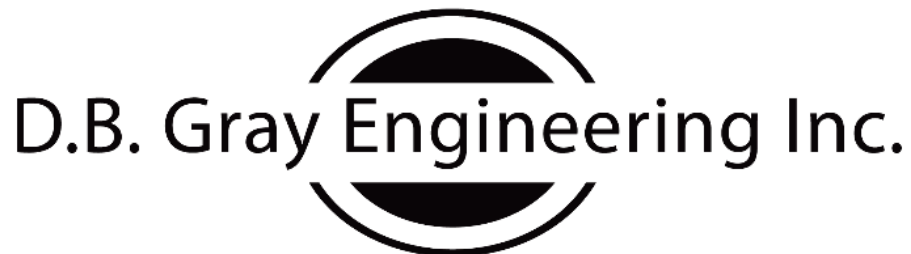
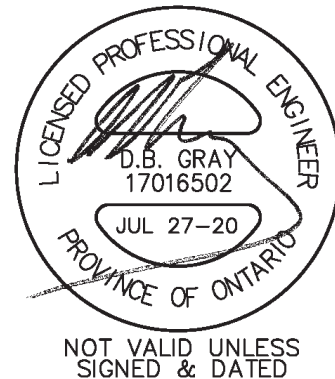


SERVICING BRIEF AND GRADING & DRAINAGE REPORT

4 Range Road
Ottawa, Ontario

Report No. 20057

July 27, 2020



Stormwater Management - Grading & Drainage - Storm & Sanitary Sewers - Watermains

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Ottawa, ON K1T 4E9

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SERVICING BRIEF AND GRADING & DRAINAGE REPORT

4 Range Road Ottawa, Ontario

This report describes the services (water, sanitary sewer and storm sewer) of a property, approximately 600 sq.m. in area, located at 4 Range Road in Ottawa. It is believed that the existing building on the property was originally a single family residence, built in the early 1900s, which was converted to an embassy. The building is being renovated to an eight-unit apartment building. (Preliminary plans are attached to this report.)

WATER SERVICE:

No water pressure issues are currently experienced.

The existing 25 mm water service connects to a 152 mm diameter municipal watermain in Range Road (an unlined cast iron watermain built in 1909). Inside the building, at the water meter, the water service is copper; outside the building the material is not known.

Based on the City of Ottawa Water Distribution Design Guidelines for residential properties (3 one-bedroom apartment units / 1.4 person per unit; 5 two-bedroom apartment units / 2.1 persons per unit; and 350 L/person/day) and Ministry of the Environment Design Guidelines for peaking factors the daily average flow is 0.1 L/s with a maximum daily and maximum hourly demand of 0.6 and 0.9 L/s respectively. The maximum hourly demand will produce a velocity of 1.7 m/s in the existing 25 mm water service; within the acceptable range of 1.5 to 2.4 m/s.

Based on the AWWA water flow demand curve, the peak demand for the building is calculated to be 1.5 L/s (23 USgpm). The AWWA method calculates the instantaneous demand and is typically used to size the water service. This peak demand will produce a velocity of 2.9 m/s in the existing 25 mm water service, which is above the acceptable limit of 2.4 m/s. This may result a slightly greater than normal pressure drop in the water service during times of peak use. To compensate and to ensure adequate pressure in the upper floors, it is recommended that all hot and cold domestic water supply pipes be one pipe size larger than normal. If this recommendation is followed the existing 25mm water service would not need to be replaced.

SANITARY SEWER SERVICE:

The existing 100 mm cast iron sanitary sewer service connects to a 300 mm diameter municipal sanitary (a concrete sewer built in 1981). A recent CCTV sewer reveals that the sewer is in acceptable condition (the CCTV report is attached to this report).

Based on the City of Ottawa Sewer Design Guidelines for a residential property (3 one-bedroom apartment units / 1.4 person per unit; 5 two-bedroom apartment units / 2.1 persons per unit; 280 l/person/day; and 3.2 peaking factor); and based on a 0.33 l/s/ha infiltration flow; the post development flow is calculated to be 0.17 L/s. This flow will be adequately handled by the existing sanitary sewer service connection (100mm at an assumed 1% slope – 5.39 L/s capacity) since, at the design flow, it will only be about 3% full. Therefore, since it is in acceptable condition, the existing 100mm sanitary sewer service does not need to be replaced.

STORM SEWER SERVICE:

There is no evidence that a storm sewer service connection exists, as is typical of a building over a hundred years old in Ottawa. A storm sewer connection is not proposed.

FOUNDATION DRAINS:

There is no evidence that foundation drains (weeping tiles) exists around the perimeter of the foundation, as is common of a building this age. (The subject property is approximately 5 m higher than Strathcona Park across the road, immediately to the east; therefore, foundation drains were not likely required.) Foundation drains are not proposed.

DRAINAGE:

No changes in grading and drainage are proposed. Existing eave troughs were located on the north side of the building and downspouts were located near the northeast and northwest corners of the building. They have been removed but will be replaced. There are no eaves troughs and downspouts on any other façade of the building and none are proposed.

Existing overland flow in north side yard drains to the Range Road ROW; therefore, the downspouts discharging to the north side yard will drain to the Range Road ROW.

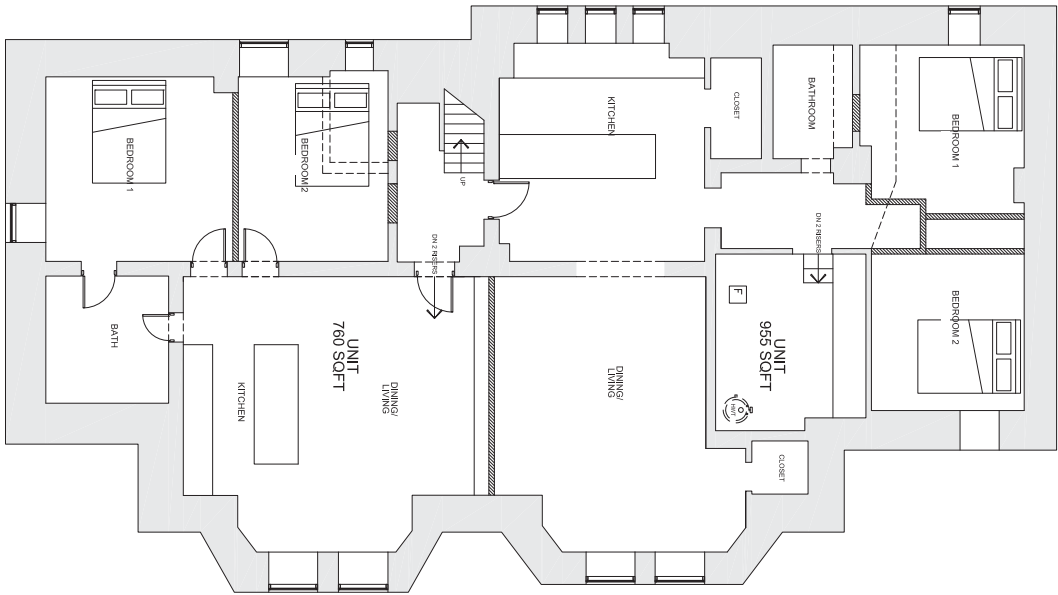
Existing overland flow in rear yard drains to the south side yard. The south side yard is low and flat but it appears that water may pond and eventually will spill over the northeast corner of the adjacent property and onto Range Road ROW.

Existing overland flow in the front yard drains to the Range Road ROW.

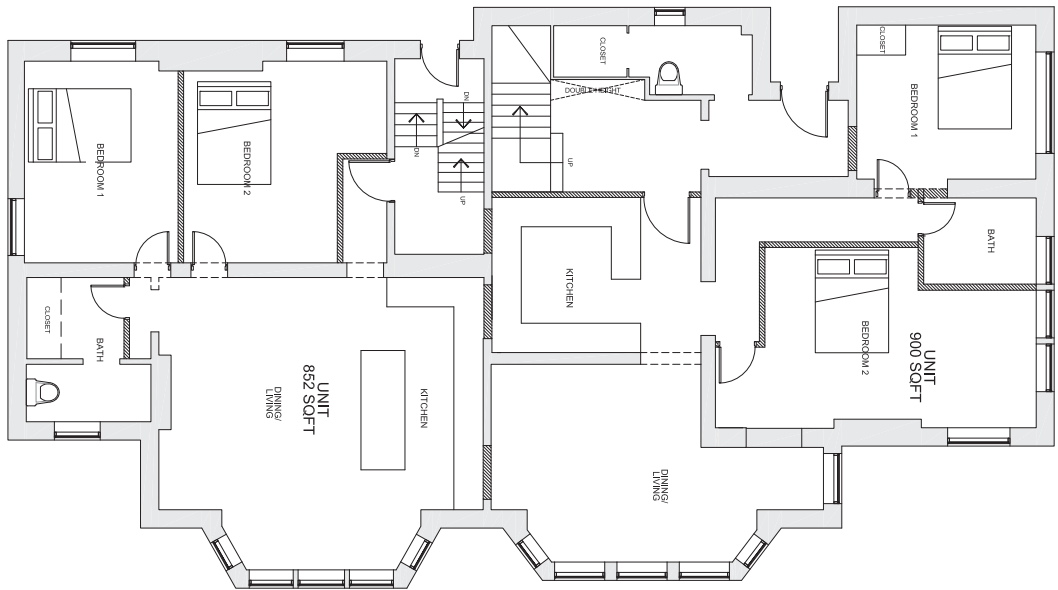
CONCLUSIONS:

1. To ensure adequate pressure in the upper floors, it is recommended that all hot and cold domestic water supply pipes be one pipe size larger than normal. If this recommendation is followed the existing 25mm water service would not need to be replaced.
2. The design sanitary sewage flow will be adequately handled by the existing 100 mm sanitary sewer service connection and since it is in acceptable condition, it does not need to be replaced.
3. There is no evidence that a storm sewer service connection exists and one is not proposed.
4. There is no evidence that foundation drains (weeping tiles) exists and none are proposed.
5. No changes in grading and drainage are proposed. All existing overland flow, including the discharge from existing eave trough downspouts, drain to the Range Road ROW.

7.0
BASEMENT PLAN



8.0
GROUND FLOOR PLAN



GENERAL NOTES

- DO NOT SCALE DRAWINGS.
- THE ARCHITECT'S RESPONSIBILITY IS TO PROVIDE A COMPLETE SET OF DRAWINGS FOR CONSTRUCTION. THE ARCHITECT IS NOT RESPONSIBLE FOR THE ACCURACY OF THE INFORMATION PROVIDED BY OTHERS.
- ALL WORK SHALL COMPLY WITH THE CANADIAN BUILDING CODES AND ALL APPLICABLE REGULATIONS.
- THE ARCHITECT'S OFFICE IS NOT RESPONSIBLE FOR THE ACCURACY OF THE INFORMATION PROVIDED BY OTHERS.
- ARCHITECTS INC. COPYRIGHT RESERVED.

PRELIMINARY SET
NOT FOR
CONSTRUCTION

NO. DATE DESCRIPTION
PROJECT NOTES

ARCHITECT'S SEAL



SHEAN
ARCHITECTS

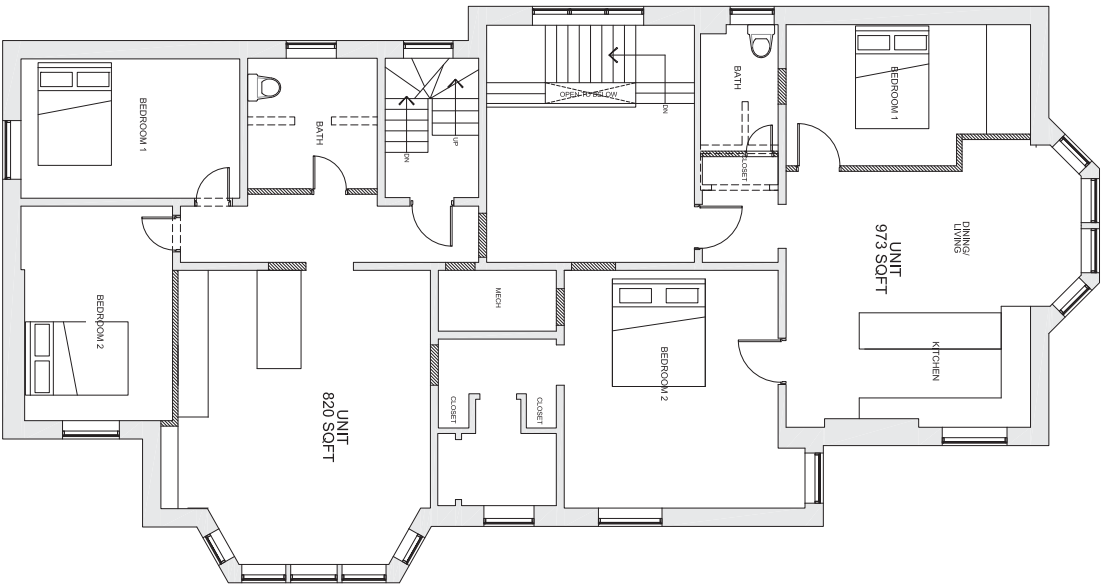
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EMBASSY
4 RANGE ROAD
OTTAWA, ON
DRAWING TITLE:
AS BUILT
BASEMENT AND GROUND FLOOR

DATE: 2020/06/11 DRAWING NO.:

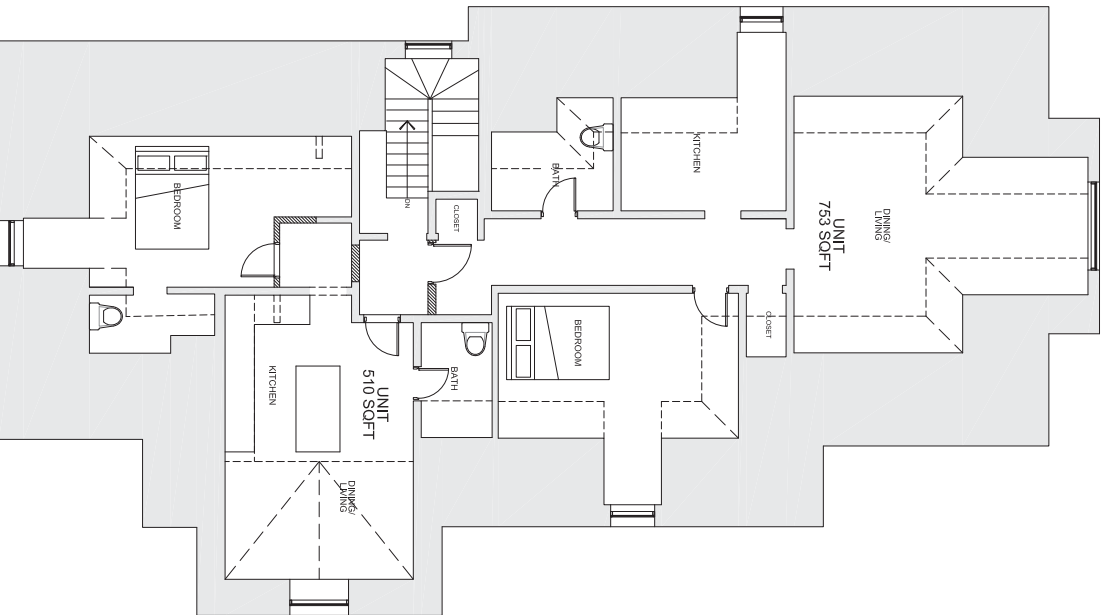
SCALE: 1/4" = 1'-0"
DESIGNED BY: AT
JOB NO.: 20-069

A0.1

7.2 SECOND FLOOR PLAN



7.3 ATTIC FLOOR PLAN



GENERAL NOTES

- DO NOT SCALE DRAWINGS.
- THE CONTRACTOR SHALL CHECK AND VERIFY ALL DIMENSIONS ON SITE AND REPORT ALL DISCREPANCIES TO THE ARCHITECT IMMEDIATELY.
- ALL WORK SHALL COMPLY WITH THE OWNERS BUILDING STANDARDS AND SPECIFICATIONS.
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PROJECT NOTES

ARCHITECT'S SEAL

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PROJECT
EMBASSY
4 RANGE ROAD
OTTAWA, ON

DRAWING TITLE:
AS BUILT
2ND FLOOR AND ATTIC

DATE: 2020/06/11
SCALE: 1/4" = 1'-0"

DRAWING BY: AT
JOB NO: 20-069

A0.2

4 Range Rd

8-Unit Apartment Building

Ottawa, Ontario

Water Demand

	Number of Units	Persons Per Unit	Population
UNIT TYPE:			
Single Family:	0	3.4	0
Semi- detached:	0	2.7	0
Duplex:	0	2.3	0
Townhouse:	0	2.7	0
APARTMENTS:			
1 Bedroom:	3	1.4	4
2 Bedroom:	5	2.1	11
3 Bedroom:	0	3.1	0
Average Aptarment:	0	1.8	0
TOTAL:			15

DAILY AVERAGE

350	litres / person / day			
3.6	L/min	0.1	L/s	1 USgpm

MAXIMUM DAILY DEMAND

9.5	(Peaking Factor for a population of <30: Table 3-3 MOE Design Guidelines for Drinking-Water Systems)			
33.9	L/min	0.6	L/s	9 USgpm

MAXIMUM HOURLY DEMAND

14.3	(Peaking Factor for a population of ,30: Table 3-3 MOE Design Guidelines for Drinking-Water Systems)			
51.1	L/min	0.9	L/s	13 USgpm

Nominal Size	1.0	in	25.4	mm
	5.5	ft/s	1.7	m/s

4 Range Rd

8-Unit Apartment Building

Ottawa, Ontario

Peak Water Demand

WATER FIXTURE VALUE

(AWWA Manual M22 - Sizing Water Service Lines and Meters)

	No.	F.V.	Total
Bathtub		8	0
Toilet - tank	8	6	48
Toilet - flush valve		24	0
Lavs.		1.5	0
Bidet		2	0
Urinal - wall flush valve		10	0
Shower	8	2.5	20
K. Sink	8	1.8	14.4
Dishwasher	8	1.3	10.4
Clothes Washer		3	0
Commercial Sink		4	0
J. Sink		4	0
Commercial Dishwasher		4	0
Commercial Washer	1	4	4
Hose 1/2 in		5	0
Hose 3/4 in		12	0
			96.8

Peak Demand (fig 4-2 or 4-3 AWWA M22) 23 USgpm

Pressure @ Meter 414 kPa 60 psi (assumed)

Pressure Factor (table 4-1 AWWA M22) 1.00

Peak Demand 23 USgpm

Irrigation - hose 1/2 in 0 USgpm (includes pressure factor)

TOTAL PEAK DEMAND 87 l/min 23 USgpm 1.5 l/s

Nominal Size 1.0 in 25.4 mm
9.4 ft/s 2.9 m/s

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Average Daily Flows

$$P = \text{Population} / 1000 \quad \frac{P}{4 + P^{0.5}}$$

Harmon Correction Factor: 0.8

Commercial & Institutional: 1.5 If contribution > 20%

Commercial & Institutional: 1 If contribution < 20%

Industrial: As per Ottawa Guidelines Appendix 4-B

Infiltration Allowance: 0.33 l/s/ha

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St-Laurent, Quebec H4S 1M2

☎ 514.738.2666

☎ 514.738.9762



INTEGRATED SEWER SOLUTIONS

Manfred

**4 Range Rd
Ottawa, Ontario
Job No.: 93736**

**Drain Use
Sanitary**

**Inspection Date
June 15th, 2020**

DRAIN CCTV INSPECTION REPORT

THE WAY IS CLEAR™

- CIPP Lateral Drain Lining
- Drain Inspection and Locating
- Preventative Maintenance Plumbing
- Frozen Pipe Thawing
- Backwater Valve Devices
- Sewer and Waterline Replacement and Repairs
- High Pressure Blasting
- Drain Cleaning and Flushing
- Plumbing Installation, Renovations and Repairs

MINI CAMERA CCTV INSPECTION REPORT

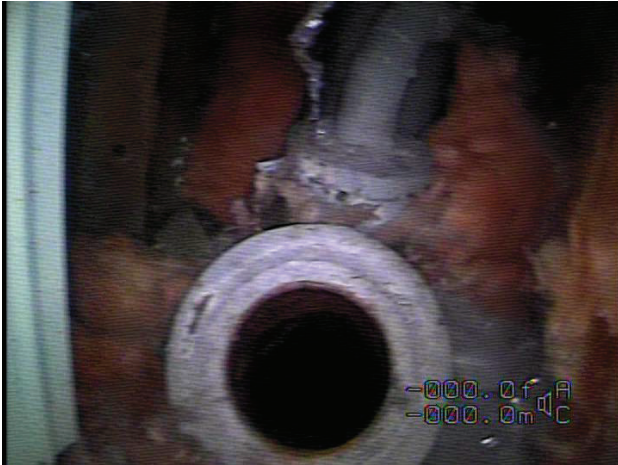
CUSTOMER:	Manfred	START OF INSPECTION:	0 Meters
JOB NO.:	93736	END OF INSPECTION:	12.0 Meters
LOCATION:	4 Range Rd OTTAWA, ONTARIO	SEWER USE:	Sanitary
DATE:	June 15 th , 2020	PIPE DIAMETER(S):	4"
OPERATOR:	Rick B	PIPE MATERIAL(S):	Cast Iron
		DIRECTION OF FLOW:	Downstream
		VIDEO FILENAME:	Video #1
		REPORT NUMBER:	1 of 2

DISTANCE (M)	CODE	INSPECTION COMMENTS	CODE	DESCRIPTION
0.0	C/O	START OF INSPECTION – CLEANOUT	AIF	ACTIVE INFILTRATION
0.2	LBD	Line Bends Down	BKJ	BROKEN JOINT
0.8	LBS	Line Bends Straight	BSG	START OF SAG
4.8	LBL	Line Bends Left	BWV	BACKWATER VALVE
5.0	WYE	TY Connection – Right	C/O	CLEANOUT
6.6	SC	Service Connection – 3 o'clock	CAL	CALCITE
6.8	SC	Service Connection – 9 o'clock	CFL	COLLAPSE
11.6	LBL	Line Bends Left	CRC	CIRCULAR CRACK
11.8	WYE	TY Connection – Left	DC	DIAMETER CHANGE
12.0	LBL	Line Bends Left	DEB	DEBRIS
12.0	END	END OF INSPECTION	DEF	PIPE DEFORMATION
			EIF	EVIDENCE OF INFILTRATION
			ESG	END OF SAG
			EXG	EXPOSED GASKET
			EXR	EXPOSED REBAR
			F/D	FLOOR DRAIN
			FRC	FRACTURE
			GRS	GREASE
			HOLE	HOLE IN PIPE
			LBD	LINE BENDS DOWN
			LBL	LINE BENDS LEFT
			LBR	LINE BENDS RIGHT
			LBS	LINE BENDS STRAIGHT
			LGC	LONGITUDINAL CRACK
			MAIN	MAIN SEWER IN BUILDING
			MC	MATERIAL CHANGE
			MH	MANHOLE
			MSP	MISSING PIPE PIECE
			OBS	OBSTRUCTION IN PIPE
			OFJ	OFFSET JOINT
			OPJ	OPEN JOINT
			PFL	PARTIAL COLLAPSE
			PSC	PROTRUDING CONNECTION
			PUN	PUNCTURE
			RTS	ROOTS
			SC	SERVICE CONNECTION
			WYE	WYE CONNECTION

COMMENTS:

Basement

VIDEO 1



VIDEO 1



MINI CAMERA CCTV INSPECTION REPORT

CUSTOMER:	Manfred	START OF INSPECTION:	12.0 Meters
JOB NO.:	93736	END OF INSPECTION:	16.0 Meters
LOCATION:	4 Range Rd OTTAWA, ONTARIO	SEWER USE:	Sanitary
DATE:	June 15 th , 2020	PIPE DIAMETER(S):	4"
OPERATOR:	Rick B	PIPE MATERIAL(S):	Cast Iron
		DIRECTION OF FLOW:	Downstream
		VIDEO FILENAME:	Video #2
		REPORT NUMBER:	2 of 2

DISTANCE (M)	CODE	INSPECTION COMMENTS	CODE	DESCRIPTION
12.0		START OF INSPECTION	AIF	ACTIVE INFILTRATION
14.6	SC	Service Connection – 9 o'clock	BKJ	BROKEN JOINT
16.0	LBD	Line Bends Down	BSG	START OF SAG
16.0	END	END OF INSPECTION – P Trap	BWV	BACKWATER VALVE
			C/O	CLEANOUT
			CAL	CALCITE
			CFL	COLLAPSE
			CRC	CIRCULAR CRACK
			DC	DIAMETER CHANGE
			DEB	DEBRIS
			DEF	PIPE DEFORMATION
			EIF	EVIDENCE OF INFILTRATION
			ESG	END OF SAG
			EXG	EXPOSED GASKET
			EXR	EXPOSED REBAR
			F/D	FLOOR DRAIN
			FRC	FRACTURE
			GRS	GREASE
			HOLE	HOLE IN PIPE
			LBD	LINE BENDS DOWN
			LBL	LINE BENDS LEFT
			LBR	LINE BENDS RIGHT
			LBS	LINE BENDS STRAIGHT
			LGC	LONGITUDINAL CRACK
			MAIN	MAIN SEWER IN BUILDING
			MC	MATERIAL CHANGE
			MH	MANHOLE
			MSP	MISSING PIPE PIECE
			OBS	OBSTRUCTION IN PIPE
			OFJ	OFFSET JOINT
			OPJ	OPEN JOINT
			PFL	PARTIAL COLLAPSE
			PSC	PROTRUDING CONNECTION
			PUN	PUNCTURE
			RTS	ROOTS
			SC	SERVICE CONNECTION
			WYE	WYE CONNECTION

COMMENTS:

Basement

VIDEO 2

