



City of Cleveland Heights
Detailed Engineering Evaluation
Water Utility Optimization

M.E. SIMPSON COMPANY, INC. - Technical Services
COMPOUND / TURBINE / DISP. METER TEST REPORT

Client : ESG - Cleveland Heights, OH Premises: _____
Account name : Warrensville Community Apartments Account no. : 2294060
Building Name: Warrensville Community Apartments Meter no.: _____
Address: 1500 WARRENSVILLE CTR Reg ID : _____
Meter location : BV/198' S 2ND HYD S MAYFIELD AMR ID: 84012747
Meter size : 6 Brand: Badger - RCRDLL II Type: Turbine S/N: 43466883
Test port: Yes Bypass: Yes Inlet valve : Yes Outlet valve: Yes Data ID: 19

READINGS

Confined Space: Yes O2 Level: 20.8 Gas Present: None Ok to Enter: Yes Supervisor: Matt S. Brown
Meter Reading Upon Arrival T/H: 007351[00] L: _____ FM: _____ Units: Cubic Feet
Meter Reading After Post Test T/H: _____ L: _____ FM: _____ Units: _____
Remote Reading Upon Arrival T/H: _____ L: _____ FM: _____ Units: _____

TEST AND REPAIR DATA

Tested: 11/13/14 1:00 PM By: Matt B. & Eric M. Repaired: _____ By: _____
Upon Arrival - Meter Sealed ☐ Bypass Sealed ☐ Upon Departure - Meter Sealed ☒ Bypass Sealed ☒

TESTS	Test Results			Post Test Results		
Compound	Flow Rate GPM	Allowable Test Accuracy	Actual Test Accuracy	Flow Rate GPM	Allowable Post Test Accuracy	Actual Post Test Accuracy
Minimum		97 - 103			95 - 103	
Below C.O.						
Change Over		90 - 103			90 - 103	
Above C.O.						
Intermediate		97 - 103			97 - 103	
Maximum		97 - 103			97 - 103	

Turb./Disp.	Flow Rate GPM	Allowable Test Accuracy	Actual Test Accuracy	Flow Rate GPM	Allowable Post Test Accuracy	Actual Post Test Accuracy
Start	10		50			
Minimum	30	98.5 - 101.5	101		98.5 - 101.5	
Intermediate	125	98.5 - 101.5	101.2		98.5 - 101.5	
Maximum	300	98.5 - 101.5	101.4		98.5 - 101.5	

TEST AND REPAIR COMMENTS

The meter tested within accuracy limits derived from AWWA M6. We recommend a 6" compound meter be installed in t meter setting.



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Water Utility Optimization

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COMPOUND / TURBINE / DISP. METER TEST REPORT

Client : ESG - Cleveland Heights, OH Premises: _____
Account name : Community Center Account no. : 20-5316-0
Building Name: Community Center Meter no.: _____
Address: 3027 MAYFIELD Reg ID : _____
Meter location : Vault in front of building by stand pipe AMR ID: 84013493
Meter size : 6 Brand: Badger - RCRDLL II Type: Turbine S/N: 43466882
Test port: Yes Bypass: Yes Inlet valve : Yes Outlet valve: Yes Data ID: 20

READINGS

Confined Space: Yes O2 Level: 20.9 Gas Present: None Ok to Enter: Yes Supervisor: Matt S. Brown
Meter Reading Upon Arrival T/H: 011252[00] L: _____ FM: _____ Units: Cubic Feet
Meter Reading After Post Test T/H: _____ L: _____ FM: _____ Units: _____
Remote Reading Upon Arrival T/H: _____ L: _____ FM: _____ Units: _____

TEST AND REPAIR DATA

Tested: 11/14/14 9:30 AM By: Matt B. & Eric M. Repaired: _____ By: _____
Upon Arrival - Meter Sealed ☐ Bypass Sealed ☐ Upon Departure - Meter Sealed ☐ Bypass Sealed ☒

TESTS	Test Results			Post Test Results		
Compound	Flow Rate GPM	Allowable Test Accuracy	Actual Test Accuracy	Flow Rate GPM	Allowable Post Test Accuracy	Actual Post Test Accuracy
Minimum		97 - 103			95 - 103	
Below C.O.						
Change Over		90 - 103			90 - 103	
Above C.O.						
Intermediate		97 - 103			97 - 103	
Maximum		97 - 103			97 - 103	

Turb./Disp.	Flow Rate GPM	Allowable Test Accuracy	Actual Test Accuracy	Flow Rate GPM	Allowable Post Test Accuracy	Actual Post Test Accuracy
Start	17		75			
Minimum	30	98.5 - 101.5	98		98.5 - 101.5	
Intermediate	125	98.5 - 101.5	95		98.5 - 101.5	
Maximum	300	98.5 - 101.5	94		98.5 - 101.5	

TEST AND REPAIR COMMENTS

The meter failed to test within accuracy limits derived from AWWA M6. We recommend a 6" compound meter be installed in this setting.



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Water Utility Optimization

M.E. SIMPSON COMPANY, INC. - Technical Services
COMPOUND / TURBINE / DISP. METER TEST REPORT

Client : ESG - Cleveland Heights, OH Premises: _____
Account name : Severance Medical Arts Building Account no. : 2054638
Building Name: Severance Medical Arts Building Meter no.: _____
Address: 5 SEVERANCE CIRCLE Reg ID : _____
Meter location : Basement main building water room AMR ID: _____
Meter size : 6 Brand: Neptune - Trident Type: Turbine S/N: 18801606
Test port: Yes Bypass: Yes Inlet valve: Yes Outlet valve: Yes Data ID: 21

READINGS

Confined Space: No O2 Level: Gas Present: Ok to Enter: Yes Supervisor: Matt S. Brown
Meter Reading Upon Arrival T/H: 0245365[00] L: FM: Units: Cubic Feet
Meter Reading After Post Test T/H: L: FM: Units:
Remote Reading Upon Arrival T/H: L: FM: Units:

TEST AND REPAIR DATA

Tested: 11/13/14 7:15 AM By: Matt B. & Eric M. Repaired: By:
Upon Arrival - Meter Sealed ☐ Bypass Sealed ☐ Upon Departure - Meter Sealed ☐ Bypass Sealed ☒

TESTS	Test Results			Post Test Results		
Compound	Flow Rate GPM	Allowable Test Accuracy	Actual Test Accuracy	Flow Rate GPM	Allowable Post Test Accuracy	Actual Post Test Accuracy
Minimum		97 - 103			95 - 103	
Below C.O.						
Change Over		90 - 103			90 - 103	
Above C.O.						
Intermediate		97 - 103			97 - 103	
Maximum		97 - 103			97 - 103	

Turb./Disp.	Flow Rate GPM	Allowable Test Accuracy	Actual Test Accuracy	Flow Rate GPM	Allowable Post Test Accuracy	Actual Post Test Accuracy
Start	8		40			
Minimum	30	98.5 - 101.5	103		98.5 - 101.5	
Intermediate	125	98.5 - 101.5	99		98.5 - 101.5	
Maximum	300	98.5 - 101.5	103		98.5 - 101.5	

TEST AND REPAIR COMMENTS

The meter failed to test within accuracy limits derived from AWWA M6. We recommend this meter be replaced with a 6" compound meter. This meter is over registering.



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Detailed Engineering Evaluation
Water Utility Optimization

M.E. SIMPSON COMPANY, INC. - Technical Services
COMPOUND / TURBINE / DISP. METER TEST REPORT

Client : ESG - Cleveland Heights, OH Premises: _____
Account name : Cavington Elementary Account no. : 2061315
Building Name: Cavington Elementary Meter no.: West meter
Address: 1893 COVENTRY Reg ID : _____
Meter location : Vault in rear entrance AMR ID: 85088220
Meter size : 2 Brand: Badger - 170 Type: Displacement S/N: 44362218
Test port: Yes Bypass: Yes Inlet valve : Yes Outlet valve: Yes Data ID: 22

READINGS

Confined Space: Yes O2 Level: 20.8 Gas Present: None Ok to Enter: Yes Supervisor: Matt S. Brown
Meter Reading Upon Arrival T/H: 071034[0] L: _____ FM: _____ Units: Cubic Feet
Meter Reading After Post Test T/H: _____ L: _____ FM: _____ Units: _____
Remote Reading Upon Arrival T/H: _____ L: _____ FM: _____ Units: _____

TEST AND REPAIR DATA

Tested: 11/12/14 4:00 PM By: Matt B. & Eric M. Repaired: _____ By: _____
Upon Arrival - Meter Sealed ☐ Bypass Sealed ☐ Upon Departure - Meter Sealed ☐ Bypass Sealed ☐

TESTS	Test Results			Post Test Results		
Compound	Flow Rate GPM	Allowable Test Accuracy	Actual Test Accuracy	Flow Rate GPM	Allowable Post Test Accuracy	Actual Post Test Accuracy
Minimum		97 - 103			95 - 103	
Below C.O.						
Change Over		90 - 103			90 - 103	
Above C.O.						
Intermediate		97 - 103			97 - 103	
Maximum		97 - 103			97 - 103	

Turb./Disp.	Flow Rate GPM	Allowable Test Accuracy	Actual Test Accuracy	Flow Rate GPM	Allowable Post Test Accuracy	Actual Post Test Accuracy
Start	x		x			
Minimum	2	95 - 101	98.8		95 - 101	
Intermediate	15	98.5 - 101.5	99.9		98.5 - 101.5	
Maximum	110	98.5 - 101.5	101		98.5 - 101.5	

TEST AND REPAIR COMMENTS

The meter tested within accuracy limits derived from AWWA M6. This meter is a dual feed to meter serial number 44362223. The two meters feed into one 4" line. Both meters are in same vault. We recommend both 2" meters be replaced with one 4" compound meter. A bypass line needs to be installed also.



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Water Utility Optimization

M.E. SIMPSON COMPANY, INC. - Technical Services
COMPOUND / TURBINE / DISP. METER TEST REPORT

Client : ESG - Cleveland Heights, OH Premises: _____
Account name : Cavington Elementary Account no. : 2061335
Building Name: Cavington Elementary Meter no.: East meter
Address: 1895 COVENTRY Reg ID : _____
Meter location : Vault in rear entrance AMR ID: 85088192
Meter size : 2 Brand: Badger - 170 Type: Displacement S/N: 44362223
Test port: Yes Bypass: Yes Inlet valve : Yes Outlet valve: Yes Data ID: 24

READINGS

Confined Space: Yes O2 Level: 20.8 Gas Present: None Ok to Enter: Yes Supervisor: Matt S. Brown
Meter Reading Upon Arrival T/H: 055481[0] L: _____ FM: _____ Units: Cubic Feet
Meter Reading After Post Test T/H: _____ L: _____ FM: _____ Units: _____
Remote Reading Upon Arrival T/H: _____ L: _____ FM: _____ Units: _____

TEST AND REPAIR DATA

Tested: 11/12/14 3:15 PM By: Matt B. & Eric M. Repaired: _____ By: _____
Upon Arrival - Meter Sealed ☐ Bypass Sealed ☐ Upon Departure - Meter Sealed ☐ Bypass Sealed ☐

TESTS	Test Results			Post Test Results		
Compound	Flow Rate GPM	Allowable Test Accuracy	Actual Test Accuracy	Flow Rate GPM	Allowable Post Test Accuracy	Actual Post Test Accuracy
Minimum		97 - 103			95 - 103	
Below C.O.						
Change Over		90 - 103			90 - 103	
Above C.O.						
Intermediate		97 - 103			97 - 103	
Maximum		97 - 103			97 - 103	

Turb./Disp.	Flow Rate GPM	Allowable Test Accuracy	Actual Test Accuracy	Flow Rate GPM	Allowable Post Test Accuracy	Actual Post Test Accuracy
Start	x		x			
Minimum	2	95 - 101	101		95 - 101	
Intermediate	15	98.5 - 101.5	99.9		98.5 - 101.5	
Maximum	100	98.5 - 101.5	99.9		98.5 - 101.5	

TEST AND REPAIR COMMENTS

The meter tested within accuracy limits derived from AWWA M6. This meter is a dual feed to meter serial number 44362218. The two meters feed into one 4" line. Both meters are in same vault. We reomnned both 2" meters be repli with one 4" compound meter. A bypass line needs to be installed also.



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Client : ESG - Cleveland Heights, OH Premises: _____
Account name : 3137 Fairmont Account no. : _____
Building Name: 3137 Fairmont Meter no.: _____
Address: 3137 Fairmont Reg ID : _____
Meter location : Vault in parkway at street corner AMR ID: 82212216
Meter size : 1" Brand: Badger - 40 Type: Displacement S/N: 36260420
Test port: Yes Bypass: No Inlet valve : Yes Outlet valve: Yes Data ID: 40

READINGS

Confined Space: Yes O2 Level: 20.9 Gas Present: None Ok to Enter: Yes Supervisor: Matt S. Brown
Meter Reading Upon Arrival T/H: 062697 L: _____ FM: _____ Units: Cubic Feet
Meter Reading After Post Test T/H: _____ L: _____ FM: _____ Units: _____
Remote Reading Upon Arrival T/H: _____ L: _____ FM: _____ Units: _____

TEST AND REPAIR DATA

Tested: 11/14/14 7:30 AM By: Matt B. & Eric M. Repaired: _____ By: _____
Upon Arrival - Meter Sealed ☐ Bypass Sealed ☐ Upon Departure - Meter Sealed ☐ Bypass Sealed ☐

TESTS	Test Results			Post Test Results		
Compound	Flow Rate GPM	Allowable Test Accuracy	Actual Test Accuracy	Flow Rate GPM	Allowable Post Test Accuracy	Actual Post Test Accuracy
Minimum		97 - 103			95 - 103	
Below C.O.						
Change Over		90 - 103			90 - 103	
Above C.O.						
Intermediate		97 - 103			97 - 103	
Maximum		97 - 103			97 - 103	

Turb./Disp.	Flow Rate GPM	Allowable Test Accuracy	Actual Test Accuracy	Flow Rate GPM	Allowable Post Test Accuracy	Actual Post Test Accuracy
Start	x		x			
Minimum	.75	95 - 101	98		95 - 101	
Intermediate	4	98.5 - 101.5	99		98.5 - 101.5	
Maximum	6	98.5 - 101.5	99		98.5 - 101.5	

TEST AND REPAIR COMMENTS

The meter tested within accuracy limits derived from AWWA M6. We only obtained a 6 gpm from the basement sink.



City of Cleveland Heights
Detailed Engineering Evaluation
Water Utility Optimization

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COMPOUND / TURBINE / DISP. METER TEST REPORT

Client : ESG - Cleveland Heights, OH Premises: _____
Account name : 2521 Apartments Account no. : _____
Building Name: 2521 Apartments Meter no.: _____
Address: 2521 Noble Road Reg ID : _____
Meter location : Vault in grass by entrance door AMR ID: 85497836
Meter size : 1.5" Brand: Badger - 120 Type: Displacement S/N: 45258973
Test port: Yes Bypass: Yes Inlet valve: Yes Outlet valve: Yes Data ID: 41

READINGS

Confined Space: Yes O2 Level: 20.8 Gas Present: None Ok to Enter: Yes Supervisor: Matt S. Brown
Meter Reading Upon Arrival T/H: 000601[0] L: _____ FM: _____ Units: Cubic Feet
Meter Reading After Post Test T/H: _____ L: _____ FM: _____ Units: _____
Remote Reading Upon Arrival T/H: _____ L: _____ FM: _____ Units: _____

TEST AND REPAIR DATA

Tested: 11/13/14 2:30 PM By: Matt B. & Eric M. Repaired: _____ By: _____
Upon Arrival - Meter Sealed ☐ Bypass Sealed ☐ Upon Departure - Meter Sealed ☒ Bypass Sealed ☐

TESTS	Test Results			Post Test Results		
Compound	Flow Rate GPM	Allowable Test Accuracy	Actual Test Accuracy	Flow Rate GPM	Allowable Post Test Accuracy	Actual Post Test Accuracy
Minimum		97 - 103			95 - 103	
Below C.O.						
Change Over		90 - 103			90 - 103	
Above C.O.						
Intermediate		97 - 103			97 - 103	
Maximum		97 - 103			97 - 103	

Turb./Disp.	Flow Rate GPM	Allowable Test Accuracy	Actual Test Accuracy	Flow Rate GPM	Allowable Post Test Accuracy	Actual Post Test Accuracy
Start	x		x			
Minimum	1.5	95 - 101	99.8		95 - 101	
Intermediate	8	98.5 - 101.5	100.3		98.5 - 101.5	
Maximum	50	98.5 - 101.5	100.6		98.5 - 101.5	

TEST AND REPAIR COMMENTS

The meter tested within accuracy limits derived from AWWA M6. There is no way to seal the bypass valve due to the handle is broken.



City of Cleveland Heights

Detailed Engineering Evaluation Water Utility Optimization

M.E. SIMPSON COMPANY, INC. - Technical Services

COMPOUND / TURBINE / DISP. METER TEST REPORT

Client : ESG - Cleveland Heights, OH Premises: _____
Account name : Kaiser Hospital Account no. : _____
Building Name: Kaiser Hospital Meter no.: _____
Address: 10 Severance Circle Reg ID : _____
Meter location : Vault south of building by P.I.V. AMR ID: _____
Meter size : 3" Brand: Badger - T-Series Type: Turbine S/N: _____
Test port: No Bypass: No Inlet valve : Yes Outlet valve: Yes Data ID: 42

READINGS

Confined Space: Yes O2 Level: _____ Gas Present: _____ Ok to Enter: No Supervisor: **Matt S. Brown**
Meter Reading Upon Arrival T/H: _____ L: _____ FM: _____ Units: _____
Meter Reading After Post Test T/H: _____ L: _____ FM: _____ Units: _____
Remote Reading Upon Arrival T/H: _____ L: _____ FM: _____ Units: _____

TEST AND REPAIR DATA

Tested: 11/10/14 8:00 AM By: Matt B. & Eric M. Repaired: _____ By: _____
Upon Arrival - Meter Sealed ☐ Bypass Sealed ☐ Upon Departure - Meter Sealed ☐ Bypass Sealed ☐

TESTS	Test Results			Post Test Results		
Compound	Flow Rate GPM	Allowable Test Accuracy	Actual Test Accuracy	Flow Rate GPM	Allowable Post Test Accuracy	Actual Post Test Accuracy
Minimum		97 - 103			95 - 103	
Below C.O.						
Change Over		90 - 103			90 - 103	
Above C.O.						
Intermediate		97 - 103			97 - 103	
Maximum		97 - 103			97 - 103	

Turb./Disp.	Flow Rate GPM	Allowable Test Accuracy	Actual Test Accuracy	Flow Rate GPM	Allowable Post Test Accuracy	Actual Post Test Accuracy
Start						
Minimum		98.5 - 101.5			98.5 - 101.5	
Intermediate		98.5 - 101.5			98.5 - 101.5	
Maximum		98.5 - 101.5			98.5 - 101.5	

TEST AND REPAIR COMMENTS

This meter is untestable in present setting. There is no test port. There is no bypass in setting, cannot shut hospital dov for testing. There is a leak on the water main (meter) line after the meter. This meter was not on list. Gas detector dete gass, so we did not enter vault. We recommend a 3" compound meter be installed in this setting.



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Detailed Engineering Evaluation
Water Utility Optimization

M.E. SIMPSON COMPANY, INC. - Technical Services
COMPOUND / TURBINE / DISP. METER TEST REPORT

Client : ESG - Cleveland Heights, OH Premises: _____
Account name : Kaiser Hospital Account no. : _____
Building Name: Kaiser Hospital Meter no.: _____
Address: 10 Severance Circle Reg ID : _____
Meter location : Vault south side in grass by entrance AMR ID: 3029820
Meter size : 6" Brand: Badger - RCRDLL II Type: Turbine S/N: 7071546
Test port: Yes Bypass: No Inlet valve : Yes Outlet valve: Yes Data ID: 43

READINGS

Confined Space: Yes O2 Level: 20.9 Gas Present: None Ok to Enter: Yes Supervisor: Matt S. Brown
Meter Reading Upon Arrival T/H: 000069[00] L: _____ FM: _____ Units: Cubic Feet
Meter Reading After Post Test T/H: _____ L: _____ FM: _____ Units: _____
Remote Reading Upon Arrival T/H: _____ L: _____ FM: _____ Units: _____

TEST AND REPAIR DATA

Tested: 11/10/14 11:00 AM By: Matt B. & Eric M. Repaired: _____ By: _____
Upon Arrival - Meter Sealed ☐ Bypass Sealed ☐ Upon Departure - Meter Sealed ☐ Bypass Sealed ☐

TESTS	Test Results			Post Test Results		
Compound	Flow Rate GPM	Allowable Test Accuracy	Actual Test Accuracy	Flow Rate GPM	Allowable Post Test Accuracy	Actual Post Test Accuracy
Minimum		97 - 103			95 - 103	
Below C.O.						
Change Over		90 - 103			90 - 103	
Above C.O.						
Intermediate		97 - 103			97 - 103	
Maximum		97 - 103			97 - 103	

Turb./Disp.	Flow Rate GPM	Allowable Test Accuracy	Actual Test Accuracy	Flow Rate GPM	Allowable Post Test Accuracy	Actual Post Test Accuracy
Start						
Minimum		98.5 - 101.5			98.5 - 101.5	
Intermediate		98.5 - 101.5			98.5 - 101.5	
Maximum		98.5 - 101.5			98.5 - 101.5	

TEST AND REPAIR COMMENTS

This meter was not on the original list. This is the dual pit next to meter that has serial number 43021066. Utility is not sure if this is a dual feed to this meter. We could not shut down water for testing. We recommend a 6" compound meter be installed in this setting along with a bypass line around the meter for testing purposes.



City of Cleveland Heights

Detailed Engineering Evaluation Water Utility Optimization

City of Cleveland Heights

Meter Vaults

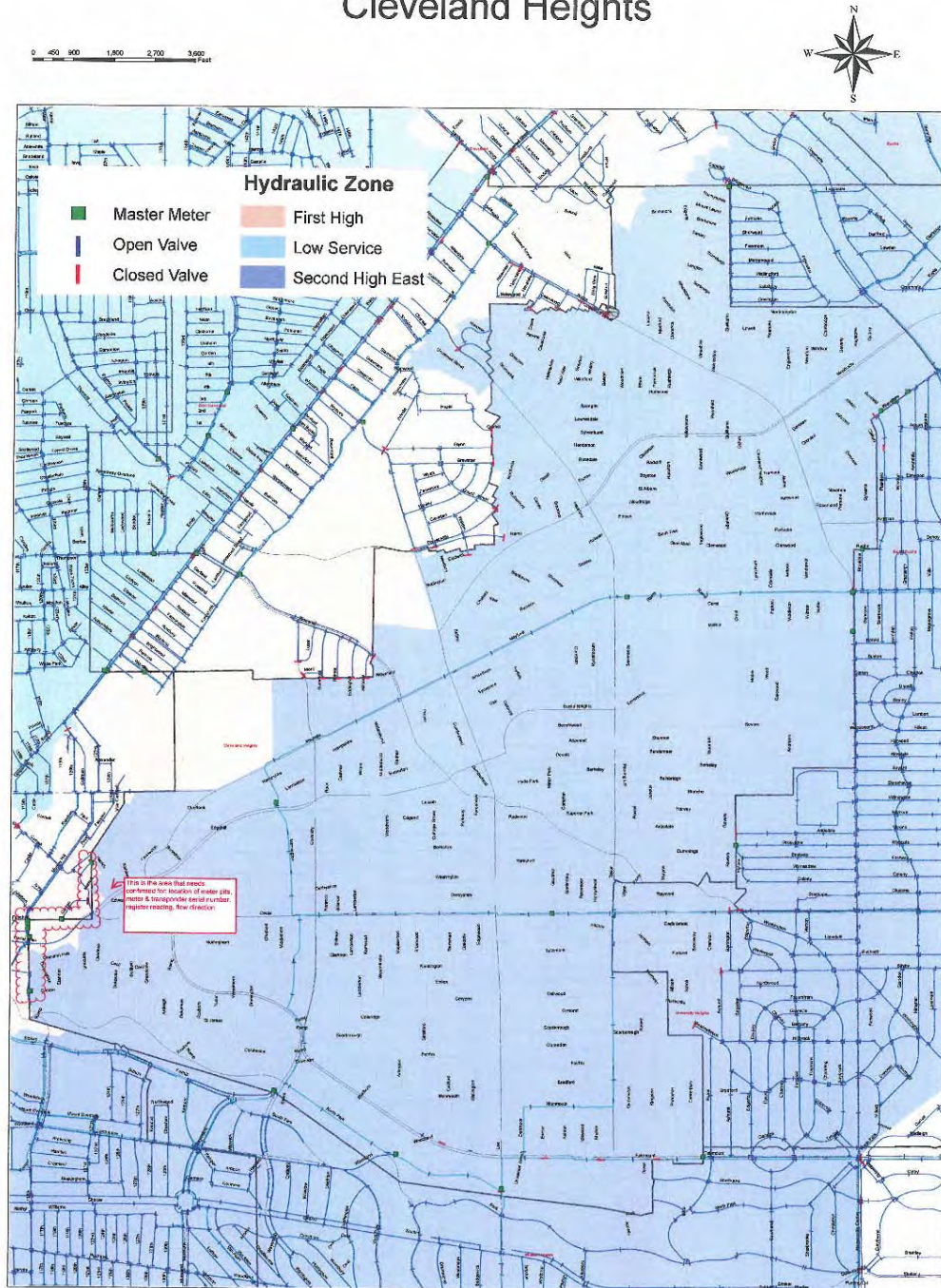
ID	Flow direction	Name	meter size (inches)	account #	Approximate Location (longitude & Latitude)	transponder serial #
1	export	Carlton	8	92330764		82397587
2	import	Case western reserve/carlton	8	92330760	41.501018, -81.600290	82281363
3	import	Lee & north park	12	93419112	41.484633, -81.565045	82483306
4	export	North vale	6	34033727	41.525787, -81.565237	82398544
5	export	Superior	6	92330781	41.516802, -81.575227	3777165
6	export	2140 Noble	6	92330780	41.537972, -81.557513	307910000
7	import	Cedar & goodnor	8	92330765	41.501222, -81.561027	82397604
8	import	Warrensville & oakwood	8	92330758	41.518301, -81.536489	82281383
9	export	Owls Nest	6	93000232	41.534609, -81.567052	82461771
10	import	Fairmont & Eaton	12	92300234	41.486493, -81.548887	82483307
11	import	Mayfield & Taylor East	8	92330772	41.520391, -81.555467	82281379
12	import	Mayfield & Taylor West	8	92330756	41.520361, -81.556171	82462654
13	import	Mayfield & Warrensville 1	8	92330761	41.520681, -81.536507	82459261
14	import	Mayfield & Warrensville 2	8	92330752	41.520681, -81.536507	82459264
15	import	Brookline	6	93330779	41.523250, -81.535800	82462324
16	import	Quaillams		92330782	41.545213, -81.546366	82398543
17	export	Quaillams credit	8	81220783	41.545213, -81.546366	82461769
18	import	Quarry & Bluestone	8	92330721	41.532804, -81.532106	82281382
19	import	Lancashire	10	92330774	41.507932, -81.583122	82461768
20	import	Murray Hill & Cedar	8	92330766	41.499934, -81.602971	8246283
21	import	Murray hill fire line	8	92330767		2980118
22	import	Murray Hill North	8		41.500808, -81.603047	3028405
23	import	Murray Hill South	8	92330787	41.500808, -81.603047	82462320
24	import	Fairhill & Northpark	8	92330753	41.490480, -81.583547	82281381
25	import	Fairhill & Northpark	8	92330771	41.490480, -81.583547	82462686
26	import	North Woodland	12	93000235	41.486719, -81.574137	82482527
27	import	Renfield & Bluestone	8	92330762	41.531640, -81.534232	82459257
28	import	Keystone & Bluestone	8	92330773	41.532242, -81.533203	82462655
29	import	Grosvenor	8	92330769	41.505321, -81.546647	82459266



City of Cleveland Heights

Detailed Engineering Evaluation Water Utility Optimization

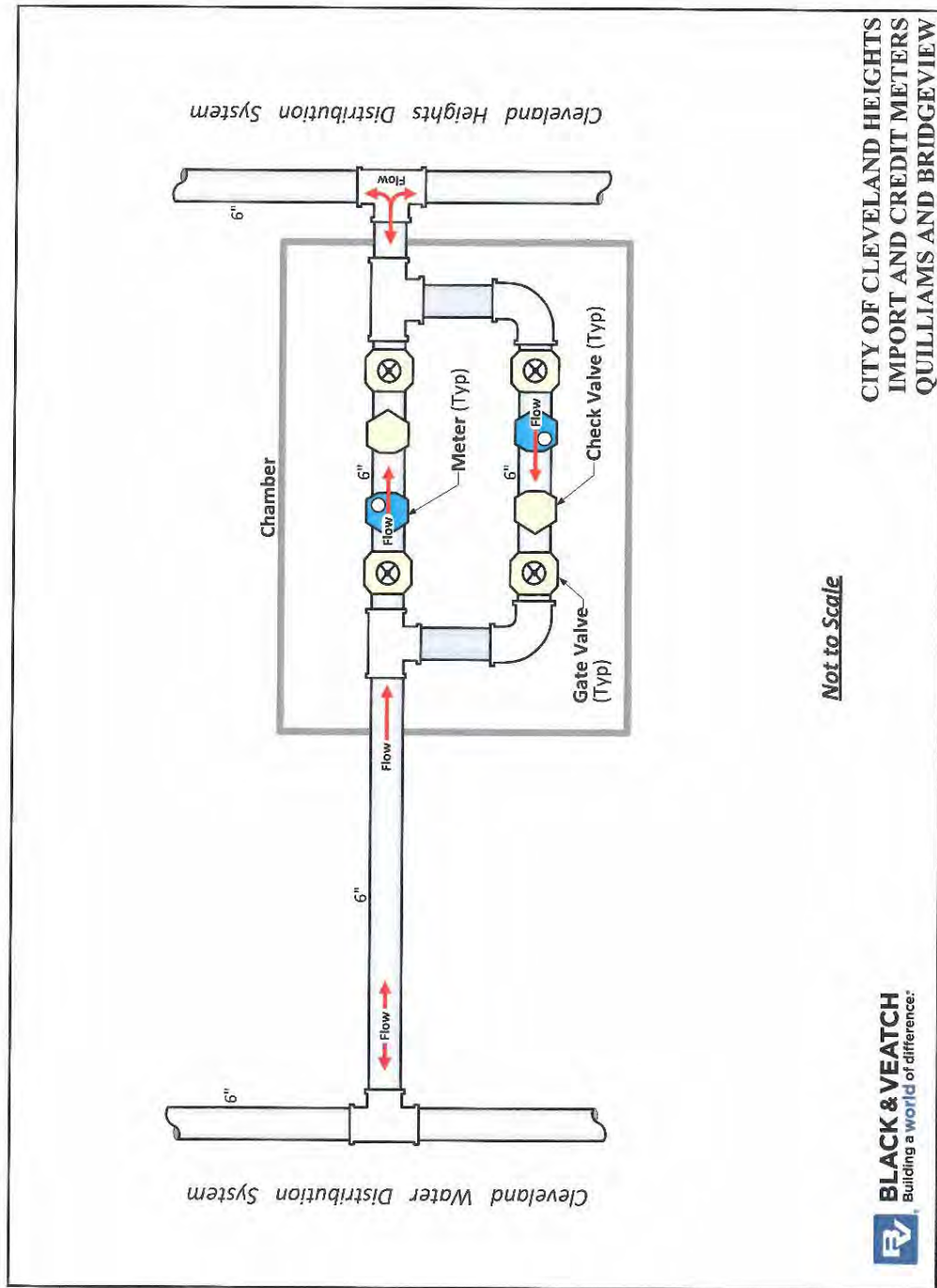
Cleveland Heights





City of Cleveland Heights

Detailed Engineering Evaluation Water Utility Optimization





City of Cleveland Heights

Detailed Engineering Evaluation

Water Utility Optimization

DW

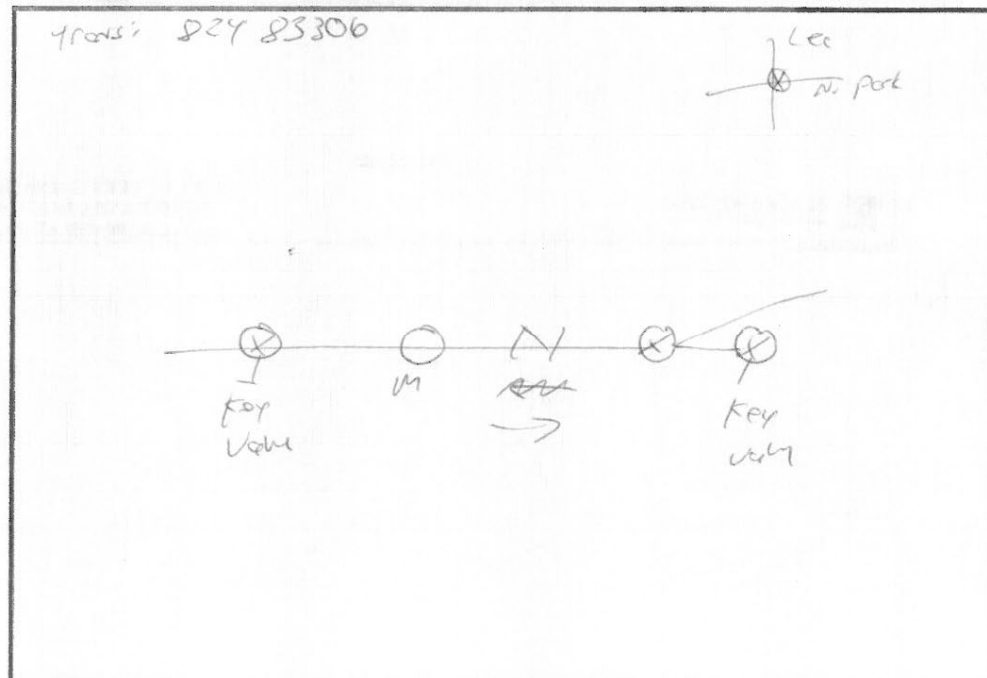


#19

CLEVELAND HEIGHTS – METER SURVEY FORM

Date	9-24-14	Name	Lee @ North Park
Physical Location	middle of intersection	Register Reading	013407
Meter size, manufacturer	Bedson	Gate Valve (y/n) Open/closed?	N open
Pit description / Qty. of Meters	1 meter	Strainer	NO
		Pit dimension (L x W x H) inches	10x6x3

Sketch pipe and meter orientation with direction of flow





City of Cleveland Heights

Detailed Engineering Evaluation Water Utility Optimization

DW



#27

CLEVELAND HEIGHTS – METER SURVEY FORM

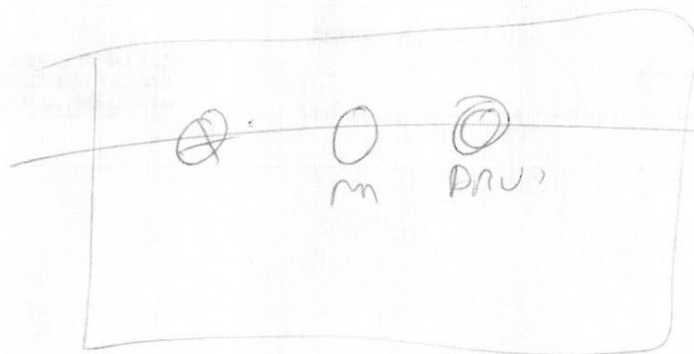
Date	9-24-14	Name	Northvale
Physical Location	Road Northvale 2 mi. west	Register Reading	see pr
Meter size, manufacturer	6" Badger	Gate Valve (y/n) Open/closed?	N open
Pit description / Qty. of Meters	Brick (1) credit meter	Strainer	N
		Pit dimension (L x W x H) inches	8 x 4 x 5

Sketch pipe and meter orientation with direction of flow

note!!!

water running but
meter not spinning

8239 8544 - from MHC





City of Cleveland Heights

Detailed Engineering Evaluation

Water Utility Optimization

DW



#28

CLEVELAND HEIGHTS – METER SURVEY FORM

Date	9-24-14	Name	open
Physical Location	14142 Superior	Register Reading	09241000
Meter size, manufacturer	Badger 6" 62584-033	Gate Valve (y/n) Open/closed?	N
Pit description / Qty. of Meters	Brick	Strainer	N
		Pit dimension (L x W x H) inches	12x5x5

Sketch pipe and meter orientation with direction of flow

trans 4094015-0000

Noise but
meter not
spinning.



City of Cleveland Heights

Detailed Engineering Evaluation Water Utility Optimization

DW



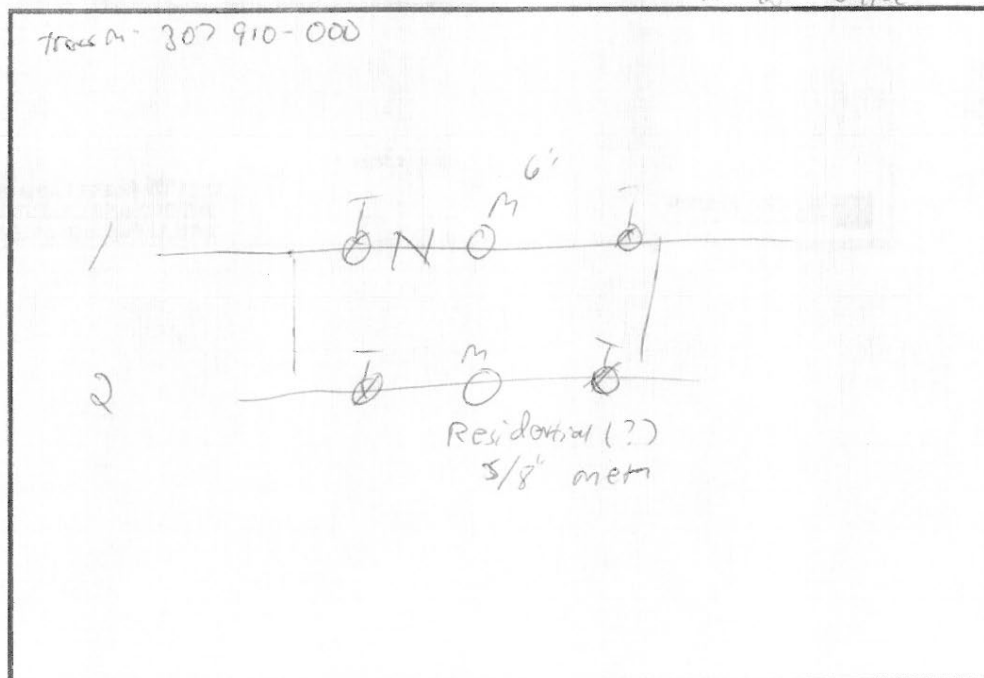
1#29

CLEVELAND HEIGHTS – METER SURVEY FORM

Date	9-24-14	Name	E-est clev-2140 node
Physical Location	2150 node by elev style here	Register Reading	006694
Meter size, manufacturer	Budger 6" 628584-002	Gate Valve (y/n) Open/closed?	yes open
Pit description / Qty. of Meters	2 metas Brick	Strainer	N
		Pit dimension (L x W x H) inches	12 x 5 x 5

Sketch pipe and meter orientation with direction of flow

Full at water





City of Cleveland Heights

Detailed Engineering Evaluation

Water Utility Optimization

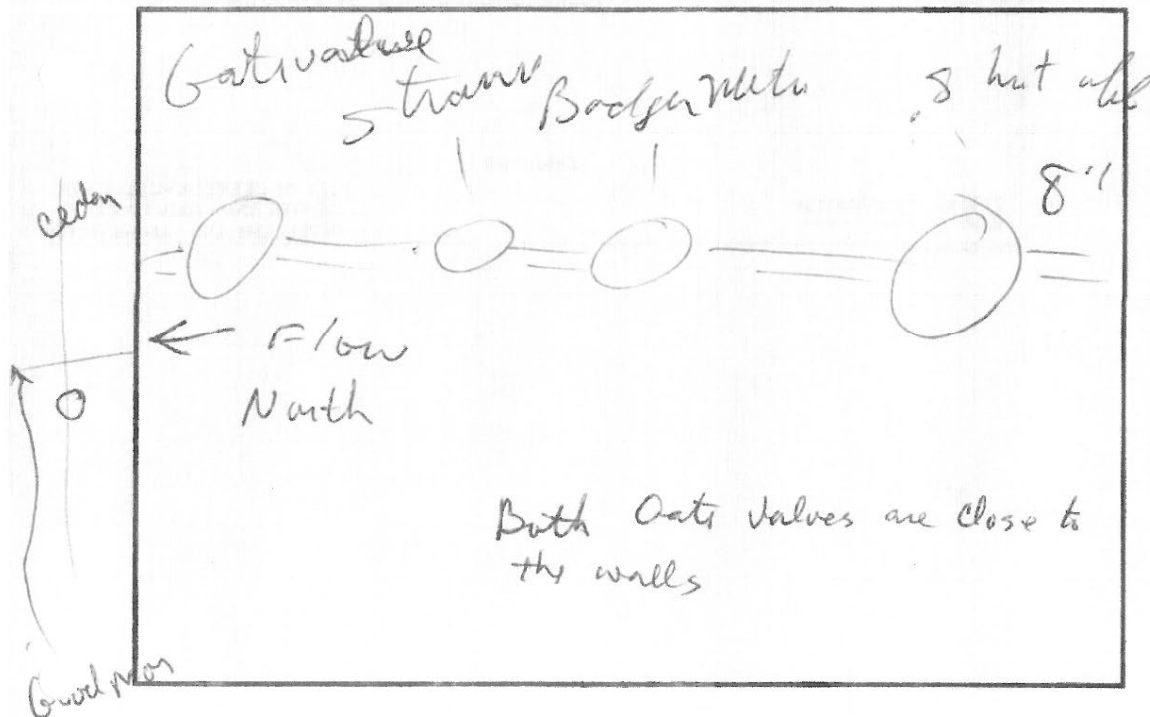


It /

CLEVELAND HEIGHTS – METER SURVEY FORM

Date	9-23-14	Name	Cedon & Gordon
Physical Location	next to H.S.	Register Reading	22392200
Meter size, manufacturer	Badger 36456714	Gate Valve (y/n) Open/closed?	open
Pit description / Qty. of Meters	1 mck	Strainer	
		Pit dimension (L x W x H) inches	Back Inches 6' W - 7' L 4' 1/2' - Run to Top of line

Sketch pipe and meter orientation with direction of flow





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Detailed Engineering Evaluation

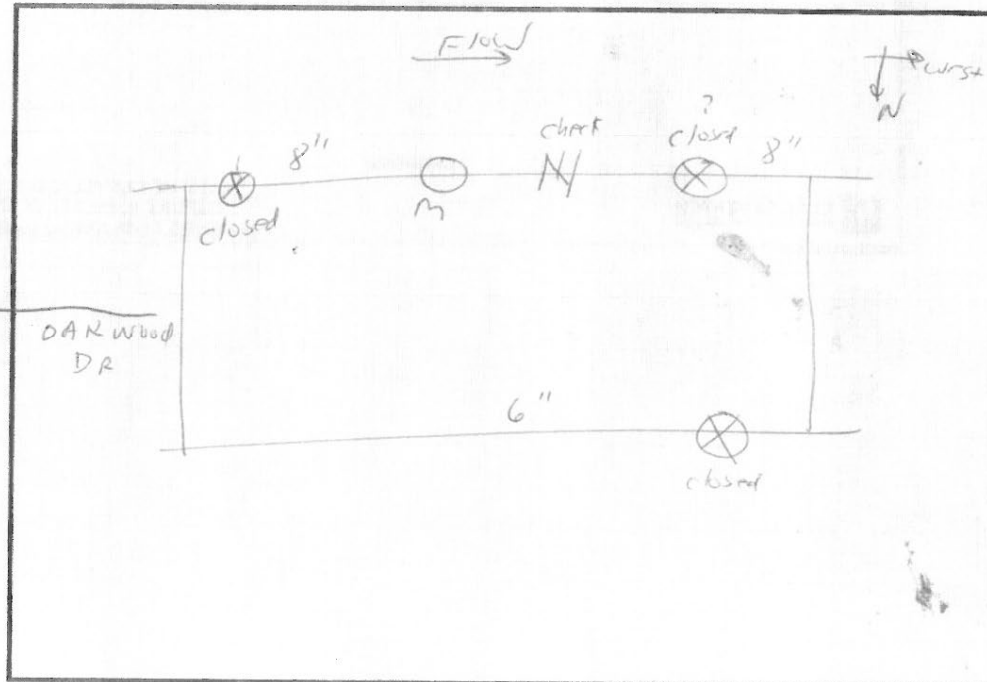
Water Utility Optimization



CLEVELAND HEIGHTS – METER SURVEY FORM

Date	9-23-14	Name	WARRENSVILLE
Physical Location	Street Pit	Register Reading	6397100
Meter size, manufacturer	Badger	Gate Valve (y/n) Open/closed?	yes, closed
Pit description / Qty. of Meters	street 16" - 7.5 blocks x 4.5 " 1 meter + bypass	Strainer	yes
		Pit dimension (L x W x H) inches	7.5 x 16' long 4.5 x 16' wide 60" high

Sketch pipe and meter orientation with direction of flow



next oakwood club



City of Cleveland Heights

Detailed Engineering Evaluation Water Utility Optimization

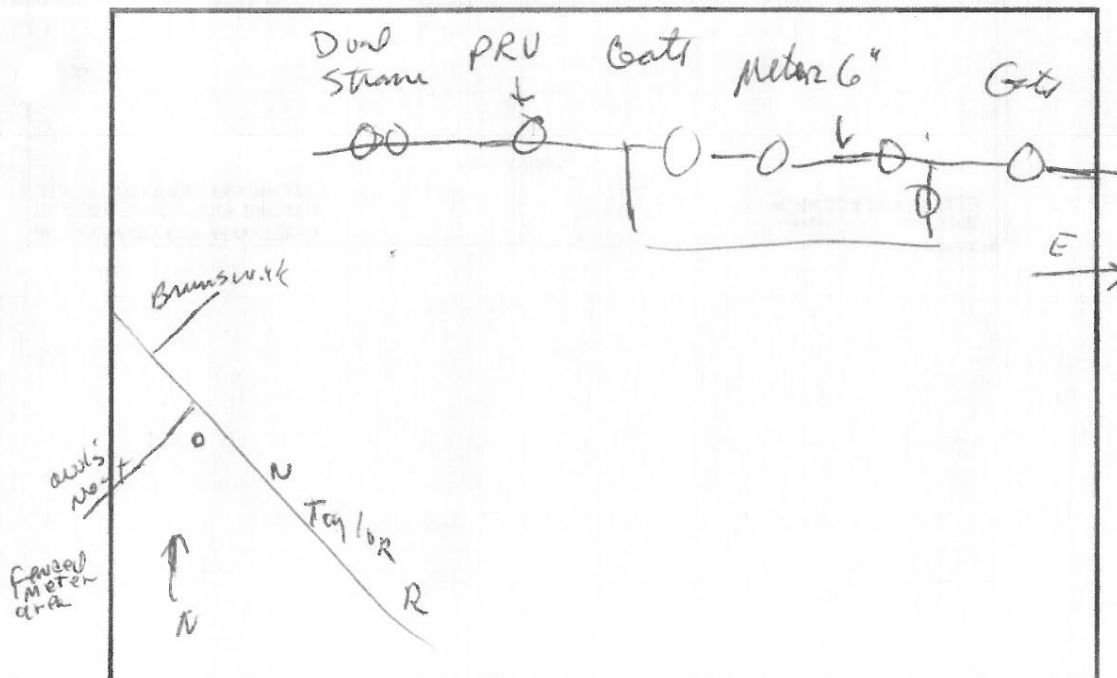


#7

CLEVELAND HEIGHTS – METER SURVEY FORM

Date	9-23-14 9 ³⁵	Name	OWLS West
Physical Location		Register Reading	7852800
Meter size, manufacturer	Badger 36456705	Gate Valve (y/n) Open/closed?	
Pit description / Qty. of Meters	4' x 4' x 10' long (east) 5' deep	Strainer	
		Pit dimension (L x W x H) inches	

Sketch pipe and meter orientation with direction of flow





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Water Utility Optimization

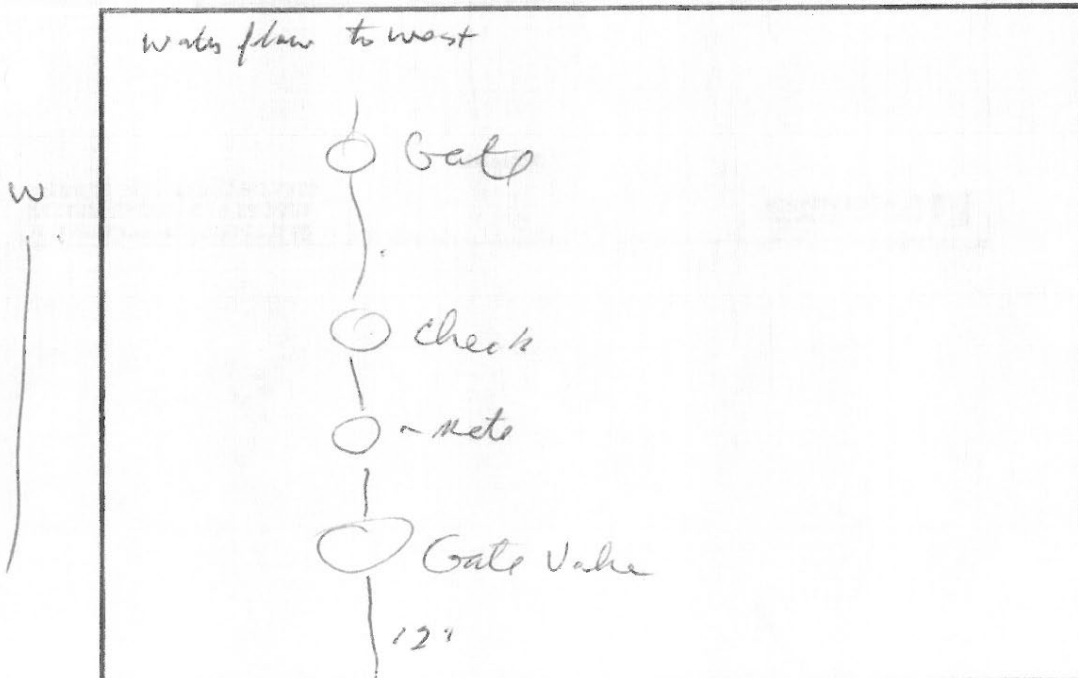
#8



CLEVELAND HEIGHTS – METER SURVEY FORM

Date	9-23-10 ⁴¹	Name	Fairmont/etou
Physical Location		Register Reading	165507
Meter size, manufacturer	Badger 18048705 165507	Gate Valve (y/n) Open/closed?	
Pit description / Qty. of Meters	cone blk 9 L 5 W 5' Deep	Strainer	
		Pit dimension (L x W x H) inches	

Sketch pipe and meter orientation with direction of flow





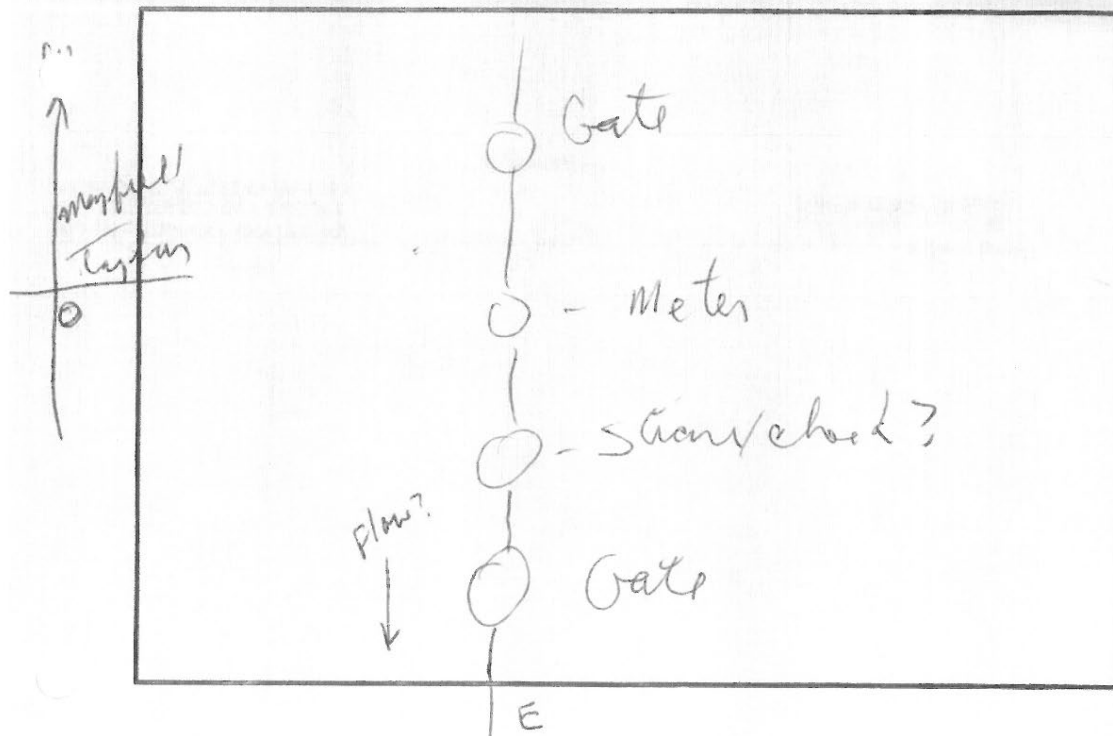
City of Cleveland Heights
Detailed Engineering Evaluation
Water Utility Optimization



CLEVELAND HEIGHTS – METER SURVEY FORM

Date	9-23-11 ⁰⁶	Name	Mayfield & Taylor E
Physical Location		Register Reading	518422
Meter size, manufacturer	Badger 36456722	Gate Valve (y/n) Open/closed?	
Pit description / Qty. of Meters		Strainer	
		Pit dimension (L x W x H) inches	4' x 8'

Sketch pipe and meter orientation with direction of flow





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Detailed Engineering Evaluation

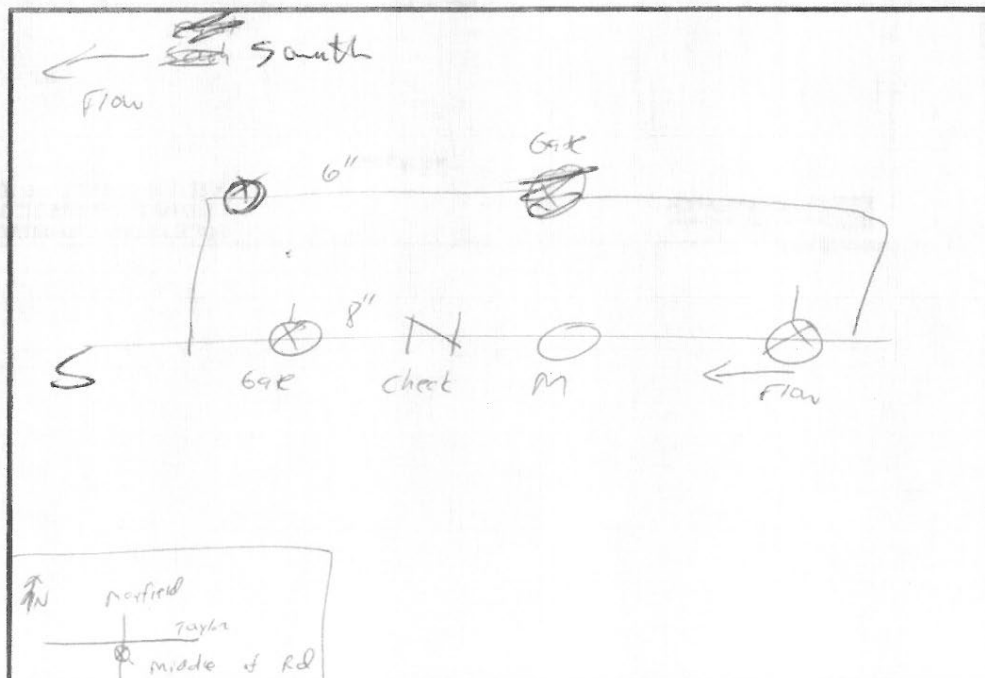
Water Utility Optimization



CLEVELAND HEIGHTS – METER SURVEY FORM

Date	9-23-14 11:24	Name	Taylor, Mafield South
Physical Location	South of Harrison in Mayfield	Register Reading	66638600 mains
Meter size, manufacturer	Budon 8" line 36456719 6" - bypass	Gate Valve (y/n) Open/closed?	yes open
Pit description / Qty. of Meters	Bypass - closed 5'	Strainer	
		Pit dimension (L x W x H) inches	10' x 5' x 6'

Sketch pipe and meter orientation with direction of flow





City of Cleveland Heights

Detailed Engineering Evaluation

Water Utility Optimization



#2 & 3

CLEVELAND HEIGHTS – METER SURVEY FORM

Date	9-23-14 1 st	Name	Mayfield @ Warrington
Physical Location	same Pit	Register Reading	
Meter size, manufacturer		Gate Valve (y/n) Open/closed?	
Pit description / Qty. of Meters		Strainer	
		Pit dimension (L x W x H) inches	

Sketch pipe and meter orientation with direction of flow

Ref Pictures -

Very Dangerous & High Traffic intersection - quick in & out took pictures only

#3

#2



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Water Utility Optimization

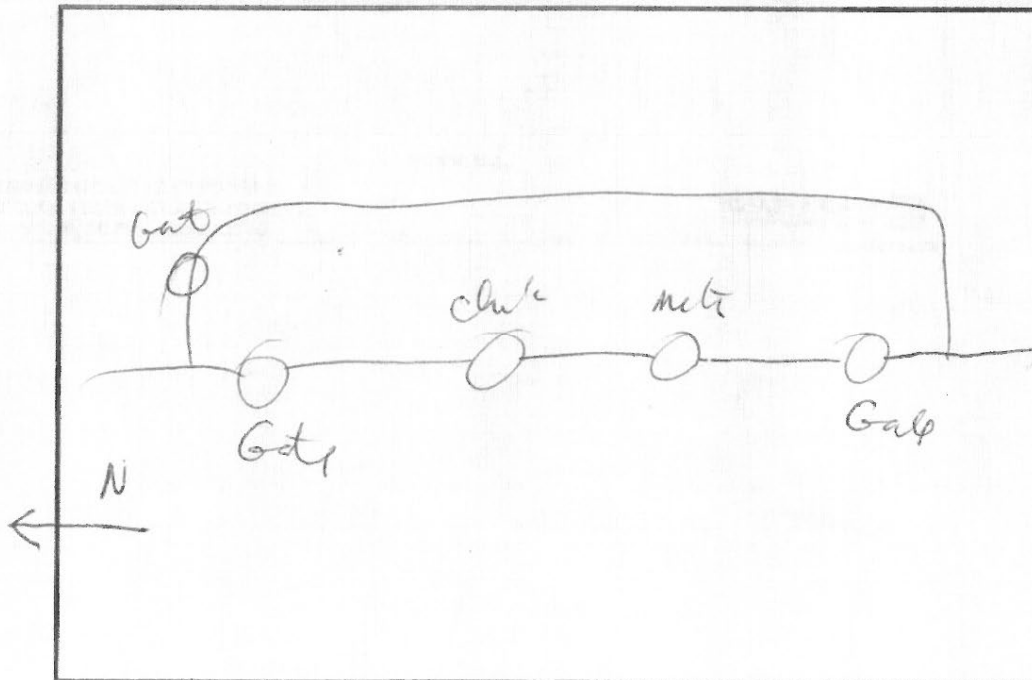


#26

CLEVELAND HEIGHTS – METER SURVEY FORM

Date	9-23-19	Name	Brookline
Physical Location	-	Register Reading	pu
Meter size, manufacturer		Gate Valve (y/n) Open/closed?	
Pit description / Qty. of Meters	7x6 4' dia	Strainer	✓
		Pit dimension (L x W x H) inches	

Sketch pipe and meter orientation with direction of flow





City of Cleveland Heights Detailed Engineering Evaluation Water Utility Optimization

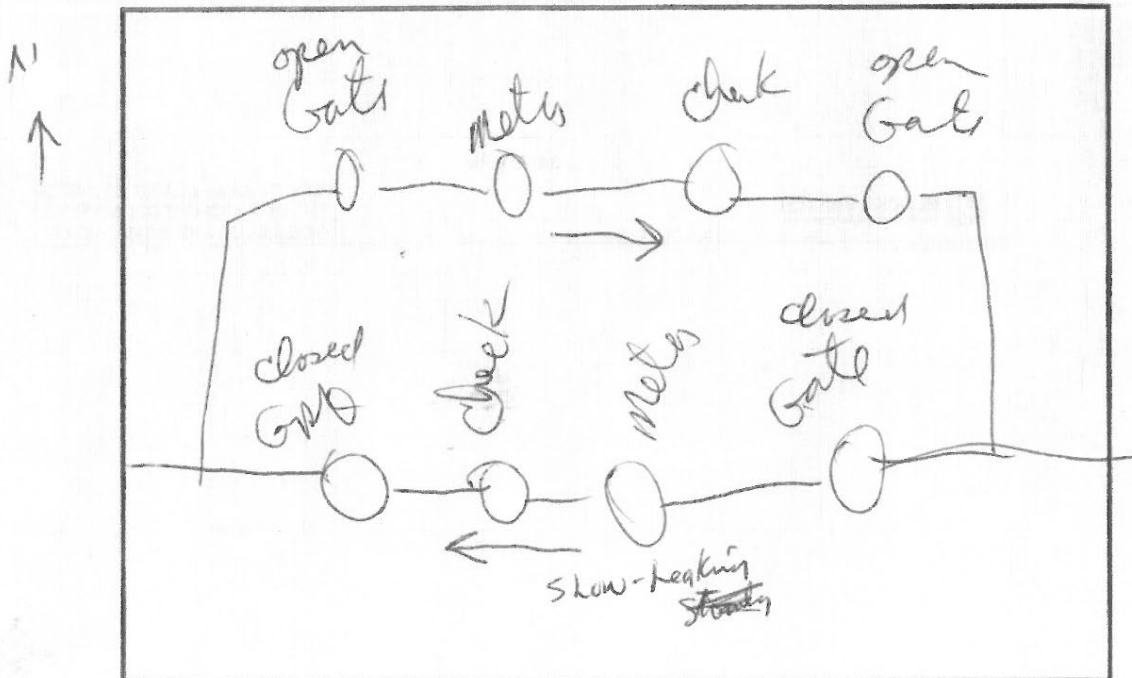


#15 & 16

CLEVELAND HEIGHTS – METER SURVEY FORM

Date	9-23-15	Name	Quillams
Physical Location		Register Reading	
Meter size, manufacturer		Gate Valve (y/n) Open/closed?	
Pit description / Qty. of Meters	2 meters	Strainer	
		Pit dimension (L x W x H) inches	6' x 12' x 6' 14

Sketch pipe and meter orientation with direction of flow





City of Cleveland Heights

Detailed Engineering Evaluation

Water Utility Optimization



9-24

CLEVELAND HEIGHTS – METER SURVEY FORM

Date	9-24	128	Name	Quincy Bluestone
Physical Location			Register Reading	12682000
Meter size, manufacturer	Boyle	8"	Gate Valve (y/n) Open/closed?	
Pit description / Qty. of Meters			Strainer	
			Pit dimension (L x W x H) inches	15' x 5' 5 ft

transponders - none

Sketch pipe and meter orientation with direction of flow

