



CITY of NOVI CITY COUNCIL

Agenda Item 1
December 21, 2015

SUBJECT: Adoption of a Resolution to approve Amendment No. 4 to the Water Service Contract with the Detroit Water and Sewerage Department (DWSD) to adjust the contract values related to annual volume, maximum day and peak hour water usage.

SUBMITTING DEPARTMENT: Department of Public Services, Water and Sewer Division *ZLC RJA*

CITY MANAGER APPROVAL: *[Signature]*

BACKGROUND INFORMATION:

In June 2009, the City of Novi entered into a new 30-year contract with Detroit Water and Sewerage Department (DWSD) to supply drinking water to the City. The agreement allows for the review/amendment of the contract for certain circumstances, including when storage is added to the distribution system. Earlier this year, construction of the City's new 1.5 million gallon ground storage tank was completed at the northeast corner of 12 Mile Road and West Park Drive. This prompted the request to "re-open" the contract to take advantage of the benefits of having storage available in the water distribution system. The purpose of the storage tank is to "peak shave," which refers to a reduction in the rate that water is drawn from the DWSD system during the peak demand times of the day (for further information refer to Ben Croy's December 2, 2015 memo, attached).

On November 16, 2015, City staff and OHM, the City's consultant assisting with an analysis of the tank's operational performance, met with representatives of DWSD to discuss our data and analysis. The primary modification to the contract being requested involves the change of Novi's status from a *Peak Hour* customer to a *Maximum Day* customer. DWSD accepted the information presented at that meeting and agreed to revise the water rate fee structure accordingly. The table below summarizes the original contract values, the previous amendments, and the currently proposed amendment:

Amendment	Maximum Day Flow (MGD)	Peak Hour Flow (MGD)
Original Contract	18.6	34.5
Amendment No. 1	16.8	24.5
Amendment No. 2	17.5	28.0
Amendment No. 3	17.9	28.6
Amendment No. 4 (Proposed Amendment)	19.0	19.0

MGD – Million Gallons Per Day

As a Max Day customer at a rate of 19.0 MGD, the Peak Hour value can be significantly reduced, **resulting in an annual savings estimated at \$3,145,950**. This annual savings will allow the cost of investing in the water storage tank to be recovered in less than two years (approximately 1.2 years). In future years, the City will have the opportunity to pass on the

annual savings to the water customers by allowing the City to buffer DWSD's annual rate increases.

The attached Amendment No. 4 to the Water Service Contract has been favorably reviewed by the City Attorney's office (see Beth Saarela's December 9, 2015 letter, attached).

According to DWSD, the revised contract would need to be approved by the Novi City Council by January 15, 2016 to become effective for the 2016 water rates in the first quarter of FY16-17.

RECOMMENDED ACTION: Adoption of a Resolution to approve Amendment No. 4 to the Water Service Contract with the Detroit Water and Sewerage Department (DWSD) to adjust the contract values related to annual volume, maximum day and peak hour water usage.

	1	2	Y	N
Mayor Gatt				
Mayor Pro Tem Staudt				
Council Member Burke				
Council Member Casey				

	1	2	Y	N
Council Member Markham				
Council Member Mutch				
Council Member Wrobel				

MEMORANDUM



TO: ROB HAYES, DPS DIRECTOR/CITY ENGINEER
FROM: BEN CROY, WATER AND SEWER SENIOR MANAGER *BLC*
SUBJECT: AMENDMENT NO. 4 TO DWSD WATER SERVICE CONTRACT
DATE: DECEMBER 2, 2015

Construction of the City of Novi's new 1.5 million gallon ground storage tank was completed earlier this year at the northeast corner of 12 Mile Road and West Park Drive. This location was chosen to allow integration of the tank with the existing under-utilized booster station, which is equipped with four pumps, each capable of pumping 2,100 gallons per minute. The purpose of the storage tank is to "peak shave", which refers to a reduction in the rate that water is drawn from the Detroit Water and Sewerage Department (DWSD) system during the peak demand times of the day. This is accomplished by filling the tank at night when demand is low, and then supplementing the City's water flow needs with stored water when demand is high to keep the flow from DWSD below a predetermined flow rate. If the flow can be limited during this high demand time period when water is most expensive, the City and its users can benefit by receiving lower water rates from DWSD.

Following construction of the water storage tank, the City gathered data to prove the water supplied by DWSD can be appropriately controlled during the high demand time periods. Based on an analysis of Novi's water usage, the City has shown it can control the peak flow rate, and has requested to open the water service contract early for renegotiation of the water rates.

On November 16, 2015, City staff and OHM, the City's consultant assisting with this analysis, met with DWSD to discuss our data and analysis. The primary modification to the contract being requested involves the change of Novi's status from a *Peak Hour* customer to a *Max Day* customer. This allows the rate structure to be based on the assumed maximum *daily* use, rather than a maximum *hourly* use which can be much more variable and in turn much more expensive. DWSD accepted the information presented at that meeting and agreed to revise our water rate fee structure accordingly. The following table summarizes the revenue requirement (the amount the City is charged by DWSD) for the current and the proposed fee structure scenarios:

	MAX DAY (MGD)	PEAK HOUR (MGD)	REVENUE REQUIREMENT
CURRENT	17.9	28.6	\$11,212,560
PROPOSED	19.0	19.0	\$8,066,610
	Annual Savings		\$3,145,950

By virtue of having storage and being a Max Day customer, at a rate of 19.0 million gallons per day (MGD) an annual savings of approximately \$3,145,950 will be realized.

The annual savings is greater than originally assumed, and at a construction cost of approximately \$3.9 million, the cost of investing in the water storage tank can be recovered in less than two years (i.e., 1.2 years versus 1.6 years assumed when the project was scoped in 2013). In future years, the City will have the opportunity to pass on the annual savings to the water customers by allowing the City to buffer DWSD's annual rate increases.

It is important to note that the City's lawn watering ordinance, limiting automatic irrigation systems to watering during the overnight hours between 11:00 PM and 5:00 AM, has helped put the City in a position to achieve the significant reduction in the revenue requirement. Since the ordinance became effective in 2008 the City's peak water usage was already shifting to the overnight hours. Compliance with the ordinance provided some of the impetus for achieving the 19.0 MGD contractual flow rate discussed above, which would become effective in August of 2016.

We plan to place the amendment to the water contract, along with a Resolution of Approval, on the December 21 City Council agenda. The proposed Amendment No. 4 to the contract is attached for reference.

Please let me know if you have any questions or comments regarding the above information.

cc: Pete Auger, City Manager
Victor Cardenas, Assistant City Manager
Carl Johnson, Finance Director
Sabrina Lilla, Senior Financial Analyst
Scott Roselle, Water and Sewer Asset Manager





JOHNSON ROSATI SCHULTZ JOPPICH PC

27555 Executive Drive Suite 250 ~ Farmington Hills, Michigan 48331
Phone: 248.489.4100 | Fax: 248.489.1726

Elizabeth Kudla Saarela
esaarela@jrsjlaw.com

www.jrsjlaw.com

December 9, 2015

Benjamin Croy, Water & Sewer Senior Manager
CITY OF NOVI
Department of Public Services
Field Services Complex
26300 Lee BeGole Drive
Novi, MI 48375

**RE: Amendment No. 4 to Water Service Contract Between City of Detroit
and City of Novi**

Dear Mr. Croy:

We have received and reviewed proposed Amendment No. 4 to the Water Service Contract between the City of Detroit and the City of Novi. The Amendment has been proposed as a result of the completion of the City's ground storage tank. Article 15 of the Contract allows a party to the contract to request an unscheduled Contract re-opener in the event of a significant change in its system operations.

The Contract Amendment provides for amended Exhibit A sheets describing the scope of the City's water system (meter pit locations) and Amended Exhibit B sheets with updated "Max Day" and "Peak Hour" schedules. The primary reason for the Amendment is that the operation of the City's ground storage tank is expected to eliminate the City's peak hour demand on DWSD's system which results in lower costs for DWSD and will result in lower rates for the City. It should be noted that the City's contracted "annual volume" is also being updated to more accurately reflect recent water use trends in the City.

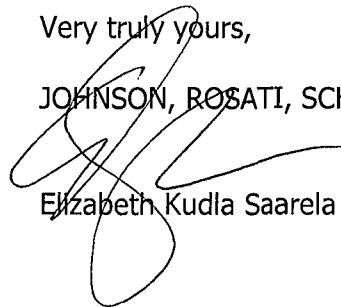
Subject to the Engineering Division's review and approval of the technical aspects of the proposed amended Exhibits A and B setting new operational parameters, we see no legal impediment to approval of Amendment No. 4 of the Water Service Contract. Except for the amended Exhibits, all other terms and conditions of the Contract will remain unchanged.

It should be noted that although the City approved an Agreement and a Resolution to assign its Water Service Contract with DWSD to the Great Lakes Water Authority (GLWA) at the July 27, 2015 City Council Meeting, the assignment process will not be completed until January, 2016 when DWSD and the GLWA are expected to have completed all conditions precedent to the Lease Agreements for DWSD's water and sewer systems. This 4th Amendment, once approved by the City and signed by DWSD, will be part of the system-wide assignment expected to conclude in January, 2016.

Please feel free to contact me with any questions or concerns in regard to this matter.

Very truly yours,

JOHNSON, ROSATI, SCHULTZ & JOPPICH, P.C.



Elizabeth Kudla Saarela

EKS

- C: Maryanne Cornelius, Clerk
- Pete Auger, City Manager
- Victor Cardenas, Assistant City Manager
- Carl Johnson, Finance Director
- Rob Hayes, Public Services Director
- Thomas R. Schultz, Esquire

CITY OF NOVI

COUNTY OF OAKLAND, MICHIGAN

RESOLUTION OF APPROVAL

AMENDMENT NO. 4 TO WATER SERVICE CONTRACT

Minutes of a meeting of the City Council of the City of Novi, County of Oakland, Michigan, held in the City Hall of said City on December 21, 2015, at 7 o'clock P.M. Prevailing Eastern Time.

PRESENT: Councilmembers_____

ABSENT: Councilmembers_____

The following preamble and Resolution were offered by Councilmember _____ and supported by Councilmember _____.

WHEREAS: THE City of Detroit owns and operates a public water supply system that supplies potable water to the City of Novi; and,

WHEREAS: on June 1, 2009, the City of Novi approved a Water Service Contract with the City of Detroit that reflects the terms and conditions governing the purchase and delivery of potable water, as amended by approval of the Novi City Council on November 22, 2010, January 7, 2013, and October 28, 2013; and,

WHEREAS: the Water Service Contract provides a means for all customers to have a long-term supply of potable water that meets or exceeds State of Michigan and federal regulatory requirements for drinking water quality and safety, and at the lowest reasonable rates; and,

WHEREAS: proposed Amendment No. 4 to the Water Service Contract adjusts three parameters (annual volume, maximum day usage, and peak hour usage) to reflect a better estimate of actual usage and flow rates; and,

WHEREAS: proposed Amendment No. 4 also identifies the location of the ground storage tank on Exhibit-A; and,

WHEREAS: Article 5, Section 5.07 of the Contract provides for periodic amendments to annual volume, maximum day usage, and peak hour usage values assigned to the City based on updated water usage data; and,

WHEREAS: the Parties seek to amend the Contract by mutual agreement pursuant to Section 5.07 of the Water Service Contract.

NOW, THEREFORE, IT IS THEREFORE RESOLVED, that the City Council and the City of Novi requests that the terms of the Water Service Contract with the City of Detroit defines and includes Amendment No. 4.

AYES:

NAYES:

RESOLUTION DECLARED ADOPTED.

Maryanne Cornelius, City Clerk

CERTIFICATION

I hereby certify that the foregoing is a true and complete copy of a resolution adopted by the City Council of the City of Novi, County of Oakland, and State of Michigan, at a regular meeting held this ____ day of _____, 2015, and that public office of said meeting was given pursuant to and in full compliance with Act No. 267, Public Acts of Michigan, 1976, and that the minutes of said meeting have been kept and made available to the public as required by said Act.

Maryanne Cornelius, City Clerk
City of Novi

**AMENDMENT NO. 4 TO WATER SERVICE CONTRACT
BETWEEN
CITY OF DETROIT
AND
CITY OF NOVI**

This Amendment Agreement No. 4 (“Amendment”) is made between the City of Detroit, a municipal corporation, by its Water and Sewerage Department and Board of Water Commissioners (the “Board”), and the City of Novi, a municipal corporation (“Customer”). The Board and Customer are collectively referred to as the “Parties”.

Whereas, the City of Detroit owns a public water supply system (“System”) operated by the Board; and

Whereas, on July 21, 2009, the Parties entered into a Water Service Contract (“Contract”) reflecting the terms and conditions governing the delivery and purchase of potable water, as subsequently amended; and

Whereas, the purpose of the Contract is to provide for the long-term service of potable water to Customer; and

Whereas, Article 15 of the Contract permits the Parties to amend the Contract by mutual agreement; and

Whereas, Customer has constructed and is operating a new water storage facility which provides for more control over its peak hour water usage; and

Whereas, it is the mutual desire of the Parties to enter into this Amendment to amend the Contract as set out in detail in the following sections; and

ACCORDINGLY, THE PARTIES AGREE AS FOLLOWS:

1. Exhibit A of the Contract is amended by deleting in its entirety the existing Second Amended Exhibit A and substituting the attached Third Amended Exhibit A in its place.
2. Exhibit B of the Contract is amended by deleting in its entirety the existing Third Amended Exhibit B and substituting the attached Fourth Amended Exhibit B in its place.
3. With the exception of the provisions of the Contract specifically contained in this Amendment, all other terms, conditions and covenants contained in the Contract shall remain in full force and effect and as set forth in the Contract.
4. This Amendment to the Contract shall be effective and binding upon the Parties when it is signed and acknowledged by the duly authorized representatives of both Parties, and is approved by Customer’s governing body and the Board.

In Witness Whereof, the City and Customer, by and through their duly authorized officers and representatives, have executed this Amendment.

City of Novi:

By: _____
Robert J. Gatt
Its: Mayor

By: _____
Maryanne Cornelius
Its: City Clerk

APPROVED BY
NOVI CITY COUNCIL ON:

Date

City of Detroit:

By: _____
Sue F. McCormick
Its: Director, Water and Sewerage Department

APPROVED BY DETROIT
BOARD OF WATER COMMISSIONERS ON:

Date

APPROVED AS TO FORM BY
DWSD GENERAL COUNSEL ON:

Date

THIRD AMENDED EXHIBIT A

Customer's Water Distribution Points

This Exhibit contains the following information:

1. The corporate limits of Customer;
2. The agreed upon water Service Area of Customer which (a) may or may not be entirely within the corporate limits of Customer and (b) which may or may not include the entire area within the Customer's corporate limits;
3. The specific location of the Water Distribution Points, including any Board approved emergency connections;
4. The designation of appurtenances to be maintained by Customer and those to be maintained by the Board; and
5. A list of any closed meter locations.

COMMERCE TOWNSHIP

MILFORD
TOWNSHIP

WEST
BLOOMFIELD
TOWNSHIP

LYON TOWNSHIP

CITY OF
FARMINGTON HILLS

CITY OF
WIXOM

CITY OF
NOVI

OAKLAND
COUNTY

WAYNE COUNTY

CITY OF
LIVONIA

NORTHVILLE TOWNSHIP

LEGEND

SYMBOL	DESCRIPTION
	DWS METER PIT
	PRV
	EMERGENCY CONNECTION
	GROUND STORAGE TANK

SYMBOL	DESCRIPTION
	SERVICE AREA
	CITY-TWP LINE
	CITY OR TWP. LINE



R.M.A.	MAY 15, 1990
A.C.	JULY 1990
T.E.W.	JANUARY 1992

EXHIBIT-A

SERVICE AREA LOCATION MAP

CITY OF NOVI

EXHIBIT A

City of Novi Emergency Connections:

Connection to Farmington Hills

6" GV&W at the intersection of Haggerty Road and JR Blvd

Connection to Walled Lake

8" GV&W at the intersection of Fourteen Mile Road and Beachwalk Drive

8" GV&W at the Windward Bay condominiums

8" GV&W at Pontiac Trail W. of West Park Drive

Connection to Wixom

8" GV&W at the intersection of Beck Road and Ardmore Court

12" GV&W on Beck Road at Shoppes at The Trail

12" GV&W on Twelve Mile Road near Pinewood

Connection to DWSD

16" GV&W at the intersection of Fourteen Mile Road and Decker between the DWSD 42" main and the Novi 16" main. Valve to operated only by DWSD staff.

City of Novi Water Customers Outside Municipal Limits:

None.

City of Novi Master Meters Not In Service:

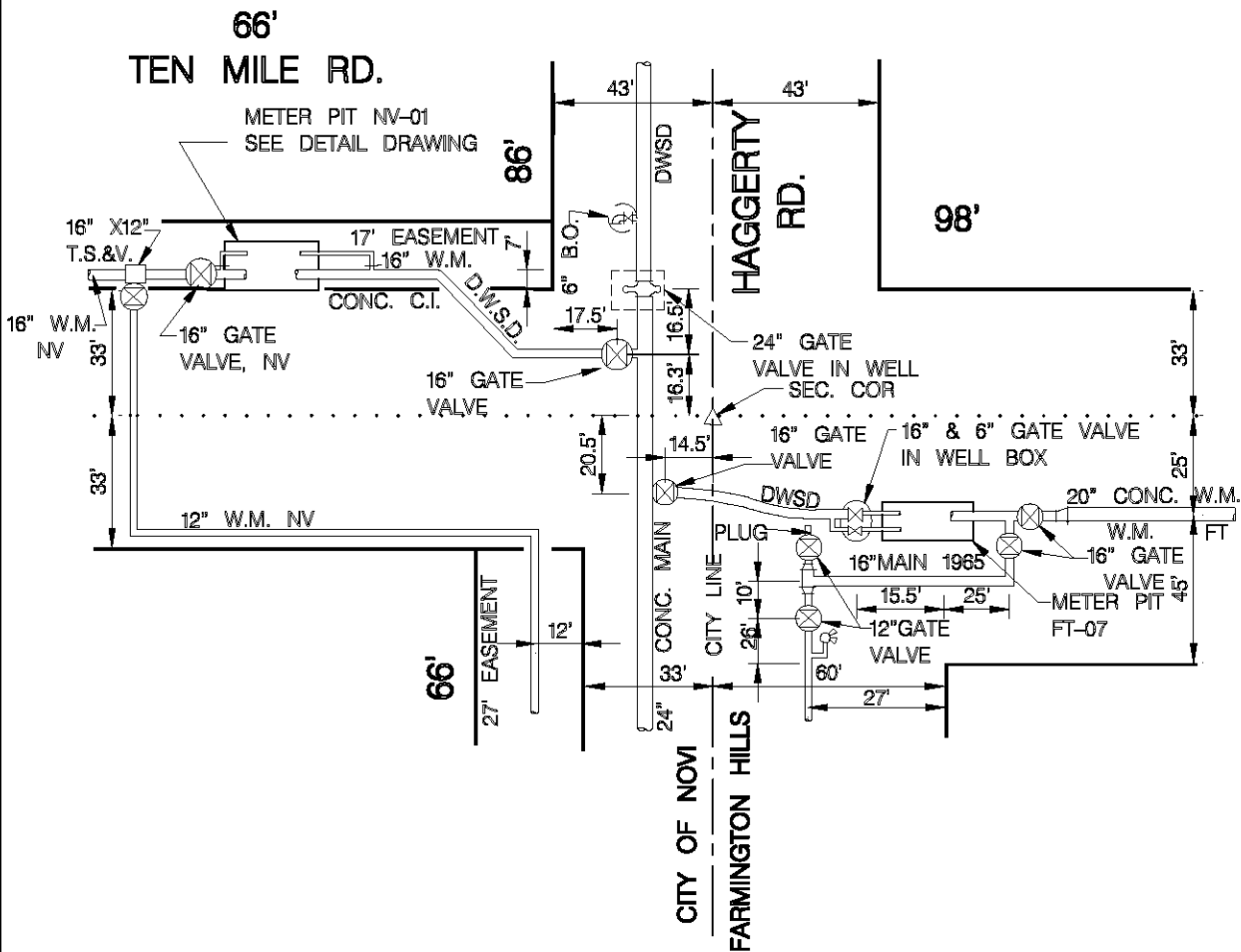
None.

EXHIBIT-A

NV-01

TEN MILE RD. AND HAGGERTY

CITY OF NOVI



NV-NOVI OWNERSHIP
AND MAINTENANCE

FT-FARMINGTON HILLS
OWNERSHIP AND MAINTENANCE

SITE PLAN
NOT TO SCALE

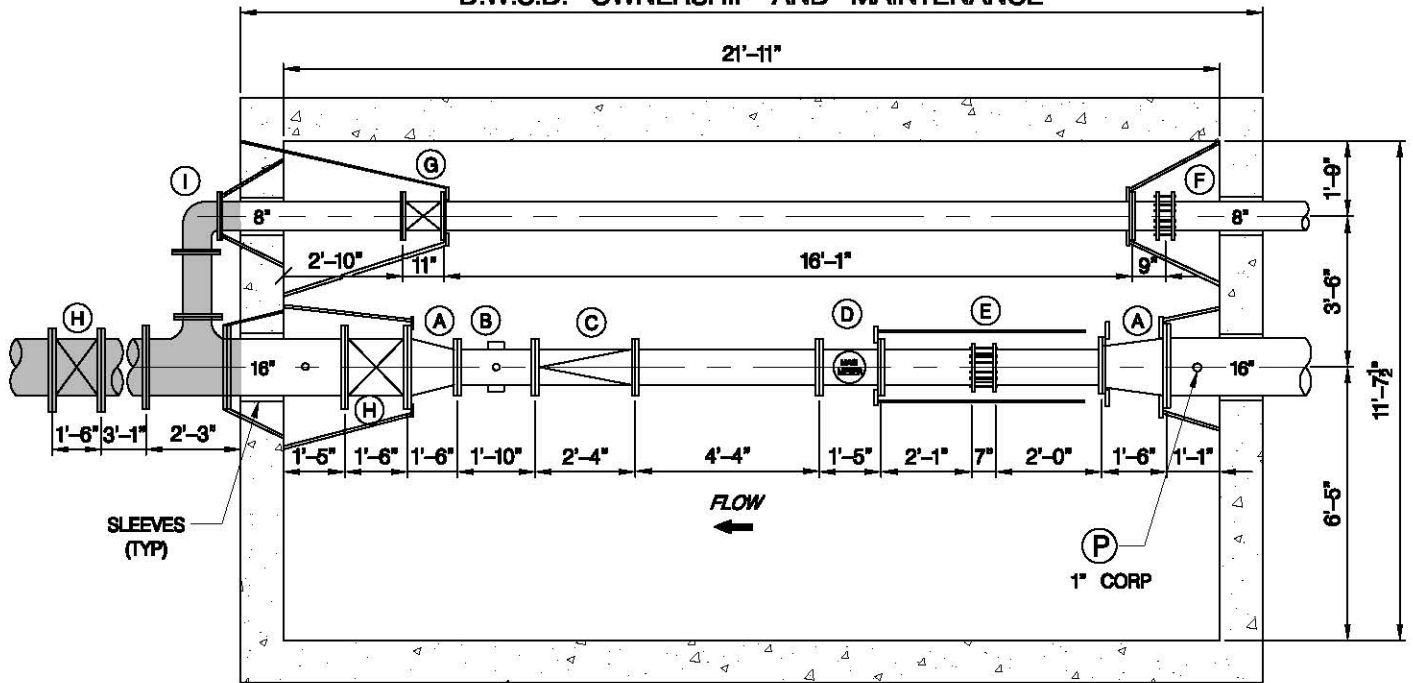


LOCATIONS SUBJECT TO
VERIFICATION IN THE FIELD.



EXHIBIT-A
NV-01
TEN MILE RD. AND HAGGERTY
CITY OF NOVI

D.W.S.D. OWNERSHIP AND MAINTENANCE



WALLS 12" THICK
ALL AROUND

METER PIT DETAIL
NOT TO SCALE



LEGEND			
TAG	QTY	DESCRIPTION	SIZE
A	2	CONCENTRIC REDUCERS, D.I.	16"x10"
B	1	DUCTILE IRON TEE	10"x3"
C	1	CHECK VALVE	10"
D	1	ABB MAG METER	10"
E	1	DRESSER STYLE 38 COUPLING	10"
F	1	DRESSER STYLE 38 COUPLING	10"
G	1	GATE VALVE	8"
H	2	GATE VALVE	16"
I	1	90° ELBOW	8"

CITY OF NOVI O&M

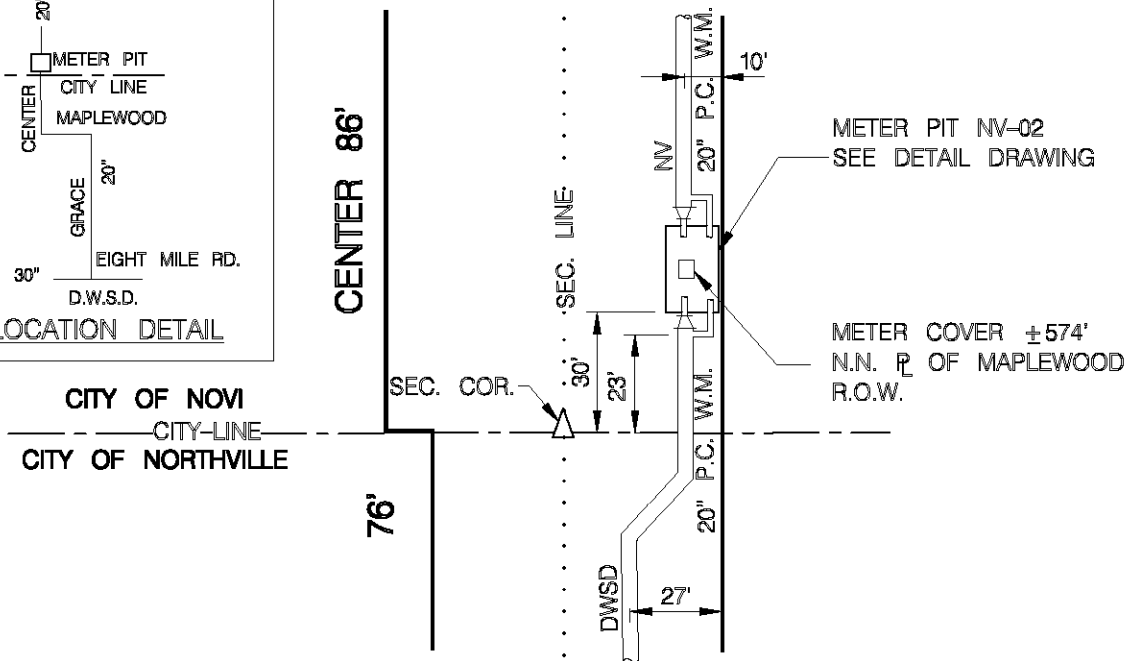
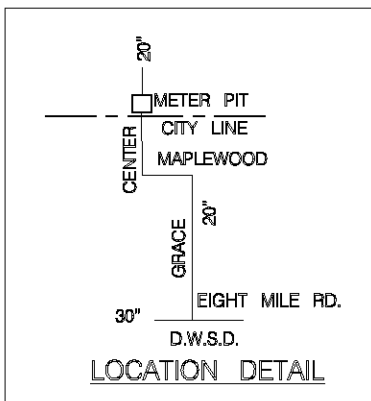
TYPICAL PRESSURE LOSS THRU METER	
METER TYPE	P.S.I. LOSS
VENTURI	1 - 2
MAG	0
TURBINE	4 - 6

UPSTREAM PRESSURE TRANSMITTER,
DWSD OWNERSHIP AND MAINTENANCE

ADDRESS _____	24200 HAGGERTY ROAD
FEED TO _____	CITY OF NOVI
FEED FROM _____	D.W.S.D. TRANS. MAIN
TYPE OF METER _____	ABB MAG METER
SIZE OF METER _____	10"
METER NUMBER _____	3K6200087703
DATE METER SET _____	DECEMBER 8, 2012
METER PIT CONST & SIZE _____	REINFORCED CONCRETE 21'-11" X 11'-7.5" I.D.
GATE BOOK No _____	W-1401
REMARKS _____	NONE



EXHIBIT-A NV-02 NORTH CENTER STREET CITY OF NOVI



**NV-NOVI OWNERSHIP
AND MAINTENANCE**

SITE PLAN
NOT TO SCALE

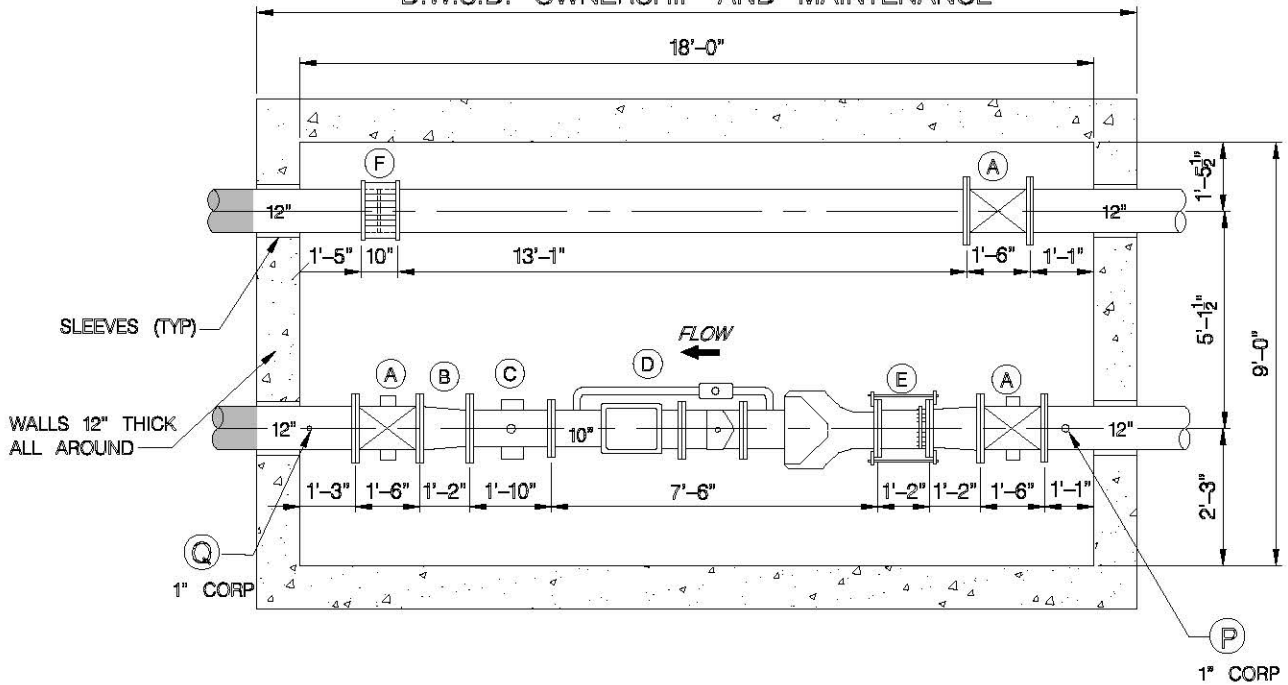


**LOCATIONS SUBJECT TO
VERIFICATION IN THE FIELD.**



EXHIBIT-A
NV-02
NORTH CENTER STREET
CITY OF NOVI

D.W.S.D. OWNERSHIP AND MAINTENANCE



METER PIT DETAIL
NOT TO SCALE

LEGEND				
TAG	QTY	DESCRIPTION	SIZE	
A	3	GATE VALVE	12"	
B	2	FXF DUCTILE IRON CONCENTRIC REDUCER	12"x10"	
C	1	TEST TEE ASSEMBLY	3"	
D	1	SENSUS FIRELINE METER W/ STRAINER & 2" BY-PASS	10"	
E	1	DUCTILE IRON SPOOL PIECE	10"	
F	1	DRESSER STYLE 128 FLANGE ADAPTER	10"	

CITY OF NOVI O&M	
TYPICAL PRESSURE LOSS THRU METER	
METER TYPE	P.S.I. LOSS
VENTURI	1 - 2
MAG	0
TURBINE	4 - 6

- (P) UPSTREAM PRESSURE TRANSMITTER, DWSD OWNERSHIP AND MAINTENANCE
- (Q) DOWNSTREAM PRESSURE TRANSMITTER, DWSD OWNERSHIP AND MAINTENANCE

ADDRESS _____ 21602 CENTER
 FEED TO _____ CITY OF NOVI
 FEED FROM _____ D.W.S.D. 20" TRANS. MAIN
 TYPE OF METER _____ SENSUS TURBO
 SIZE OF METER _____ 10" X 2"
 METER NUMBER _____ 10")1508467 & 2")1482108
 DATE METER SET _____ 4/11/1997
 METER PIT CONST & SIZE _____ REINFORCED CONCRETE 18'-0" X 9'-0" I.D.
 GATE BOOK No _____ NONE
 REMARKS _____ NONE

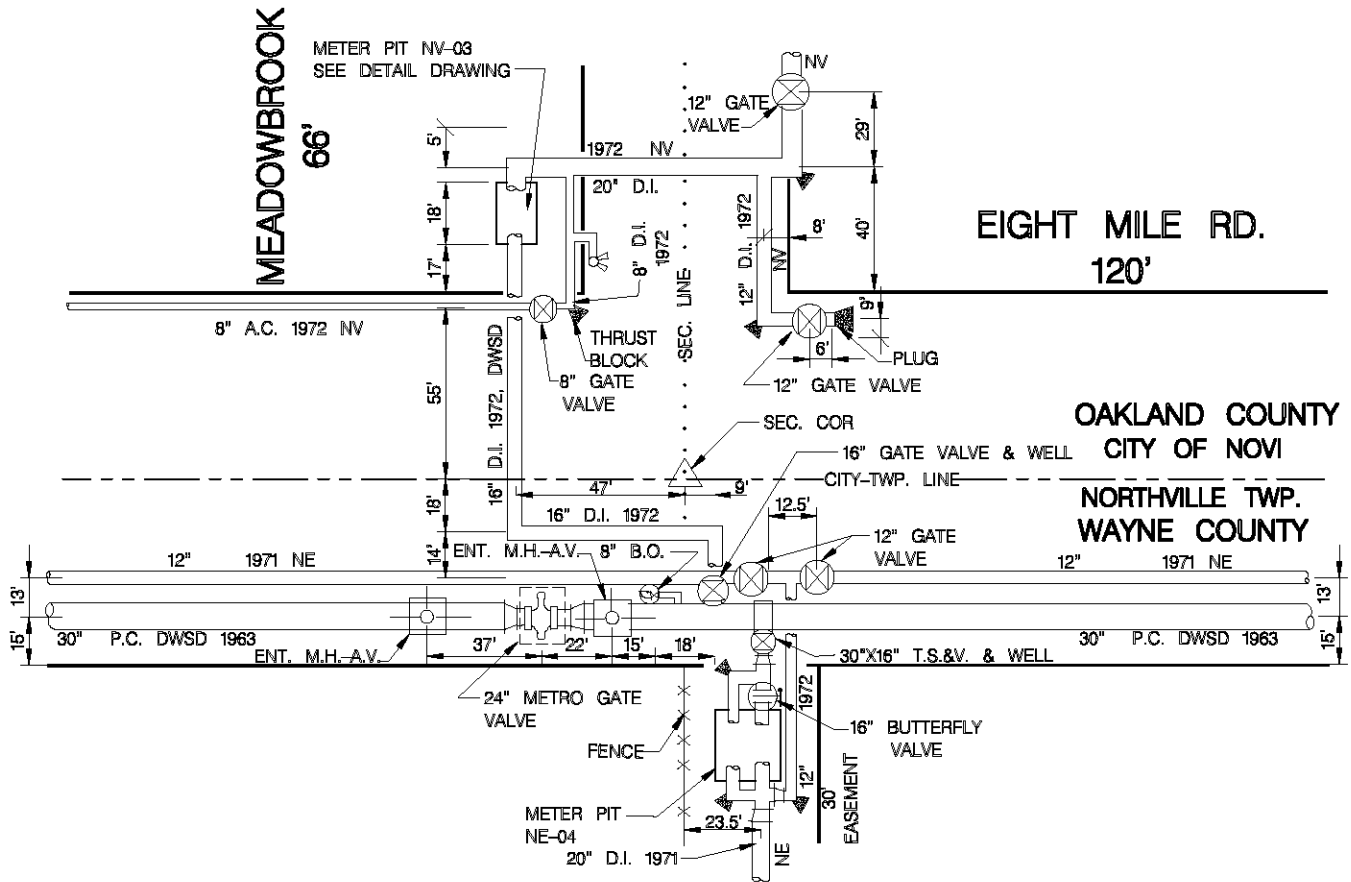


EXHIBIT-A

NV-03

EIGHT MILE AND MEADOWBROOK

CITY OF NOVI



NV- NOVI OWNERSHIP AND MAINTENANCE
 NE- NORTHVILLE TWP. OWNERSHIP AND MAINTENANCE

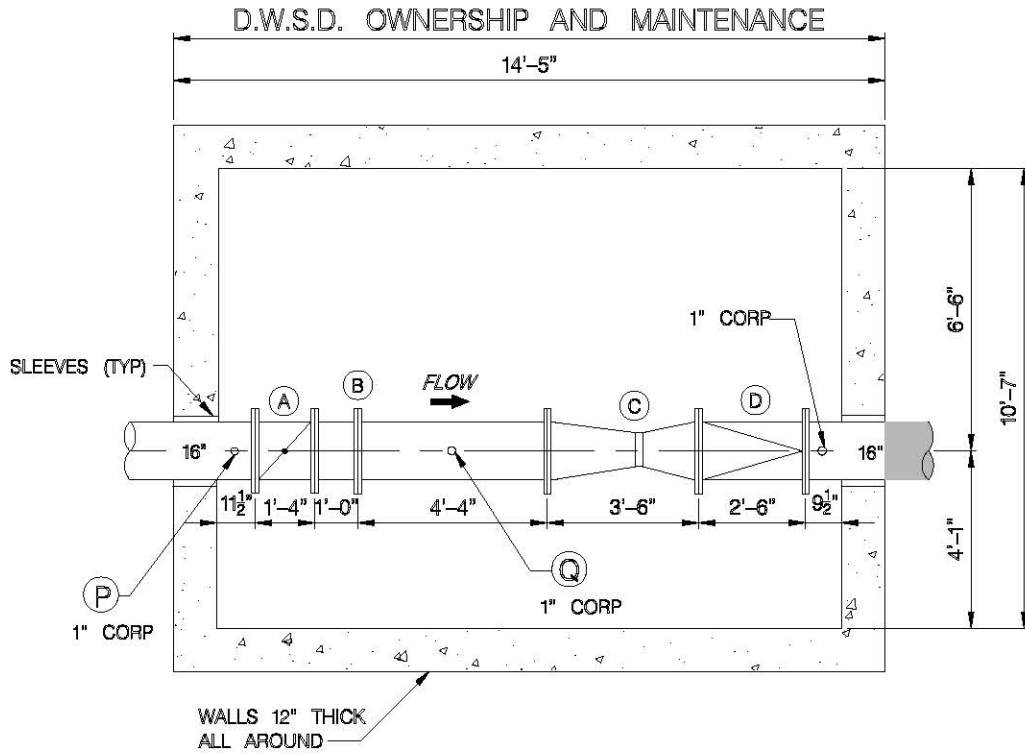
SITE PLAN
 NOT TO SCALE



LOCATIONS SUBJECT TO VERIFICATION IN THE FIELD.



EXHIBIT-A
 NV-03
 EIGHT MILE AND MEADOWBROOK
 CITY OF NOVI



METER PIT DETAIL +Z
 NOT TO SCALE

LEGEND			
TAG	QTY	DESCRIPTION	SIZE
A	1	BUTTERFLY VALVE W/ ORIFICE	16"
B	1	VICTAULIC COUPLING	18"
C	1	B.I.F. VENTURI TUBE	16"x10"
D	1	CHAPMAN CHECK VALVE	16"

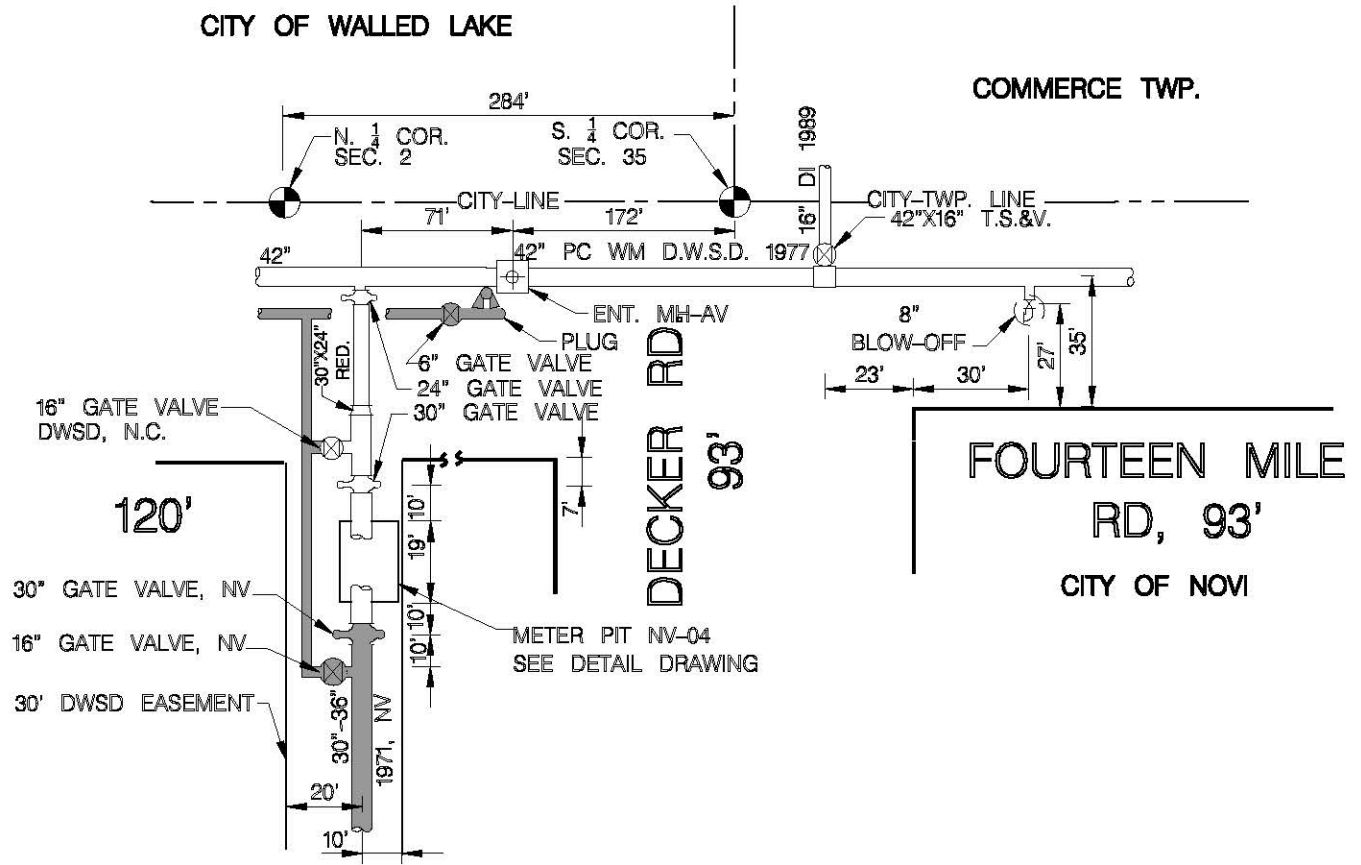
CITY OF NOVI O&M	
TYPICAL PRESSURE LOSS THRU METER	
METER TYPE	P.S.I. LOSS
VENTURI	1 - 2
MAG	0
TURBINE	4 - 6

- (P) UPSTREAM PRESSURE TRANSMITTER, DWSD OWNERSHIP AND MAINTENANCE
- (Q) DOWNSTREAM PRESSURE TRANSMITTER, DWSD OWNERSHIP AND MAINTENANCE

ADDRESS _____ 20707 MEADOWBROOK
 FEED TO _____ CITY OF NOVI
 FEED FROM _____ 30" D.W.S.D. TRANS. MAIN
 TYPE OF METER _____ BIF VENTURI/ORIFICE
 SIZE OF METER _____ 16" & 16.25" X 4.079"
 METER NUMBER _____ 16")16638-2 & 16.25")16638-1
 DATE METER SET _____ 8/31/1971
 METER PIT CONST & SIZE _____ REINFORCED CONCRETE 14'-5" X 10'-7" I.D.
 GATE BOOK No _____ W-1375
 REMARKS _____ NONE



EXHIBIT-A
 NV-04
 FOURTEEN MILE WEST OF DECKER RD.
 CITY OF NOVI



NV-NOVI OWNERSHIP
 AND MAINTENANCE

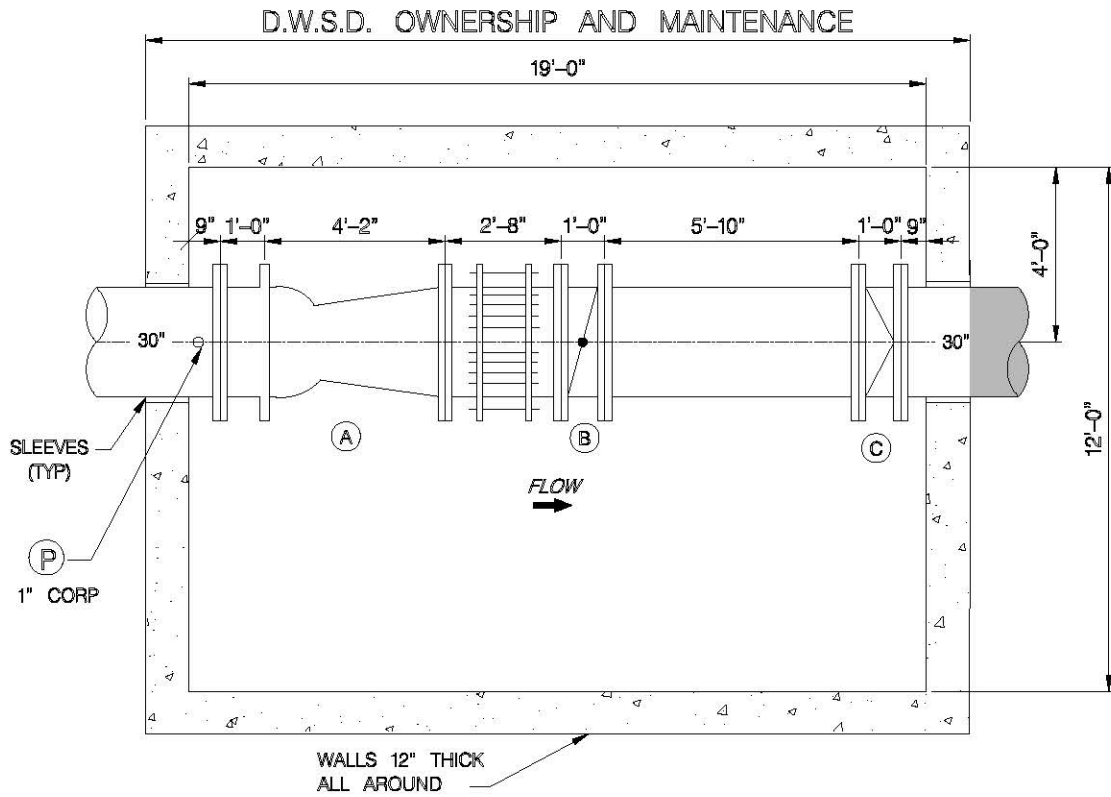
SITE PLAN
 NOT TO SCALE



LOCATIONS SUBJECT TO
 VERIFICATION IN THE FIELD.



EXHIBIT-A
 NV-04
 FOURTEEN MILE RD. WEST OF DECKER RD.
 CITY OF NOVI



METER PIT DETAIL
 NOT TO SCALE

Z+
 CITY OF NOVI O&M

LEGEND			
TAG	QTY	DESCRIPTION	SIZE
A	1	BIF VENTURI / ORIFICE	30"
B	1	BUTTERFLY VALVE	30"
C	1	CHECK VALVE	30"

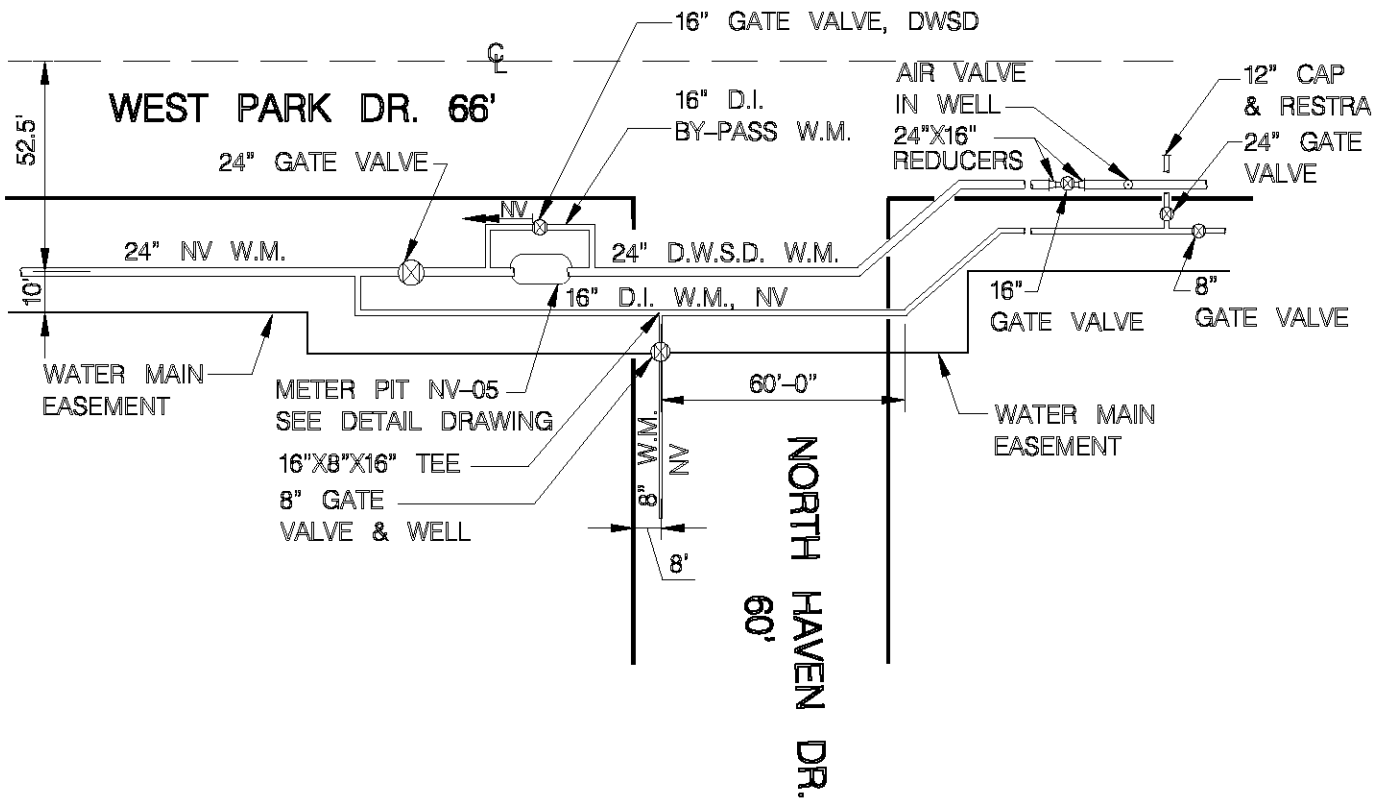
TYPICAL PRESSURE LOSS THRU METER	
METER TYPE	P.S.I. LOSS
VENTURI	1 - 2
MAG	0
TURBINE	4 - 6

(P) UPSTREAM PRESSURE TRANSMITTER,
 DWSD OWNERSHIP AND MAINTENANCE

ADDRESS _____	42351 FOURTEEN MILE RD.
FEED TO _____	CITY OF NOVI
FEED FROM _____	42" D.W.S.D. MAIN
TYPE OF METER _____	BIF VENTURI / ORIFICE
SIZE OF METER _____	30"X17.4" & 30"X6.0604"
METER NUMBER _____	17.4")1462410 & 6.0604")1462411
DATE METER SET _____	5-14-77
METER PIT CONST & SIZE _____	REINFORCED CONCRETE 17' X 12' I.D.
GATE BOOK No _____	N-517
REMARKS _____	-



EXHIBIT-A
 NV-05
 WEST PARK DR. AND NORTH HAVEN DR.
 CITY OF NOVI



NV-NOVI OWNERSHIP
 AND MAINTENANCE

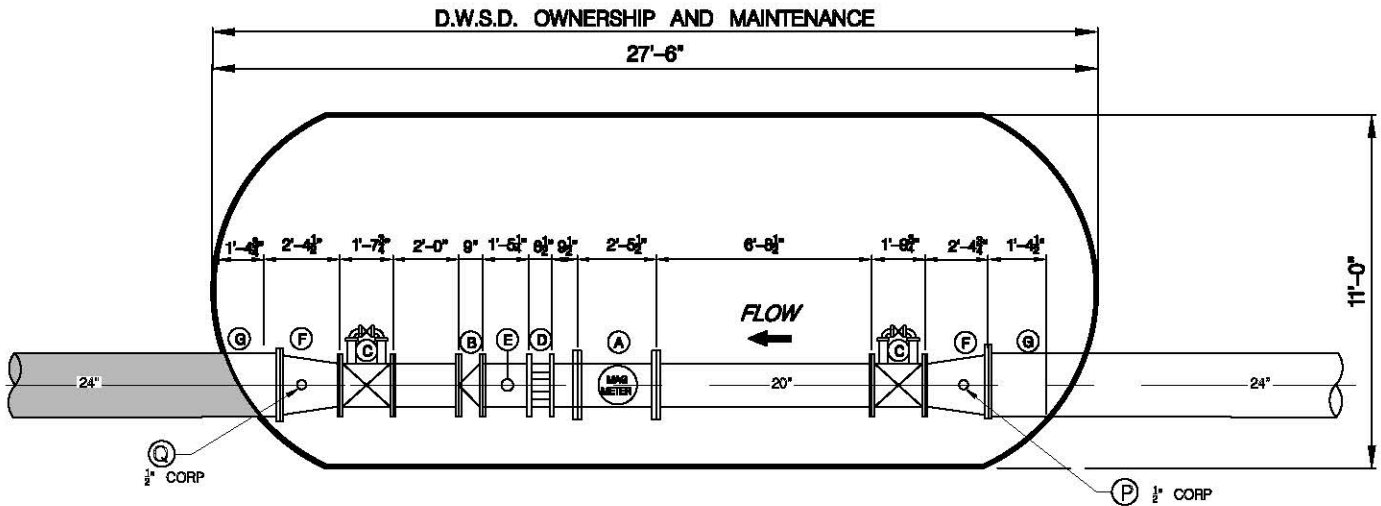
SITE PLAN
 NOT TO SCALE



LOCATIONS SUBJECT TO
 VERIFICATION IN THE FIELD.



EXHIBIT-A
 NV-05
 WEST PARK DR. AND NORTH HAVEN DR.
 CITY OF NOVI



METER PIT DETAIL

NOT TO SCALE



LEGEND			
TAG	QTY	DESCRIPTION	SIZE
A	1	ABB MAG METER	20"
B	1	CHECK VALVE	20"
C	2	GATE VALVE	20"
D	1	MECHANICAL COUPLING	20"
E	1	TEST FITTING	16"
F	2	WELD IN REDUCER	24"X20"
G	1	SLEEVE	10"

CITY OF NOVI O&M	
TYPICAL PRESSURE LOSS THRU METER	
METER TYPE	P.S.I. LOSS
VENTURI	1 - 2
MAG	0
TURBINE	4 - 6

- ① UPSTREAM PRESSURE TRANSMITTER, DWSD OWNERSHIP AND MAINTENANCE
- ② DOWNSTREAM PRESSURE TRANSMITTER, DWSD OWNERSHIP AND MAINTENANCE

ADDRESS _____
 FEED TO _____ CITY OF NOVI
 FEED FROM _____ 24" DWSD TRANSMISSION MAIN
 TYPE OF METER _____ ABB MAG
 SIZE OF METER _____ 20"
 METER PIT CONST & SIZE _____ STEEL VAULT 27'-6" X 11'-0" I.D.
 GATE BOOK No _____ -
 REMARKS _____ DWSD HAS ACCESS



FOURTH AMENDED EXHIBIT B

Projected Annual Volume and Minimum Annual Volume (Table 1)
Pressure Range and Maximum Flow Rate (Table 2)
Flow Split Assumptions (Table 3)
Addresses for Notice (Table 4)

Table 1 and Table 2 set forth the agreed upon Projected Annual Volumes, Minimum Annual Volumes, Pressure Ranges and Maximum Flow Rates for the term of this Contract provided that figures in bold type face are immediately enforceable pursuant to the terms of Section 5.07 and italicized figures are contained for planning purposes only but will become effective absent the negotiated replacements anticipated in Section 5.07.

The approximate rate of flow by individual meter set forth in Table 3 is the assumption upon which the Pressure Range commitments established in Table 2 have been devised. Should Customer deviate from these assumptions at any meter(s), the Board may be unable to meet the stated Pressure Range commitments in this Contract or in the contract of another customer of the Board and Section 5.08 of this Contract may be invoked.

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Table 1
 Projected Annual Volume and Minimum Annual Volume

Fiscal Year Ending June 30	Projected Annual Volume (Mcf)	Minimum Annual Volume (Mcf)
2010	325,000	162,500
2011	281,800	140,900
2012	281,800	140,900
2013	281,800	140,900
2014	303,000	151,500
2015	310,000	155,000
2016	311,000	155,500
2017	265,000	132,500
2018	265,000	132,500
2019	265,000	132,500
2020	<i>265,000</i>	<i>132,500</i>
2021	<i>265,000</i>	<i>132,500</i>
2022	<i>265,000</i>	<i>132,500</i>
2023	<i>265,000</i>	<i>132,500</i>
2024	<i>265,000</i>	<i>132,500</i>
2025	<i>265,000</i>	<i>132,500</i>
2026	<i>265,000</i>	<i>132,500</i>
2027	<i>265,000</i>	<i>132,500</i>
2028	<i>265,000</i>	<i>132,500</i>
2029	<i>265,000</i>	<i>132,500</i>
2030	<i>265,000</i>	<i>132,500</i>
2031	<i>265,000</i>	<i>132,500</i>
2032	<i>265,000</i>	<i>132,500</i>
2033	<i>265,000</i>	<i>132,500</i>
2034	<i>265,000</i>	<i>132,500</i>
2035	<i>265,000</i>	<i>132,500</i>
2036	<i>265,000</i>	<i>132,500</i>
2037	<i>265,000</i>	<i>132,500</i>
2038	<i>265,000</i>	<i>132,500</i>
2039	<i>265,000</i>	<i>132,500</i>

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Table 2
Pressure Range and Maximum Flow Rate

Calendar Year	Pressure Range (psi)		Pressure Range (psi)		Pressure Range (psi)		Pressure Range (psi)		Pressure Range (psi)		Maximum Flow Rate (mgd)	
	Meter NV-01		Meter NV-02		Meter NV-03		Meter NV-04		Meter NV-05		Max Day	Peak Hour
	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max		
2009	54	82	52	79	55	82	81	109	72	100	18.57	34.53
2010	54	82	52	79	55	82	81	109	72	100	18.57	34.53
2011	54	82	52	79	55	82	81	109	72	100	17.30	25.50
2012	54	82	52	79	55	82	81	109	72	100	16.80	24.50
2013	54	82	52	79	55	82	81	109	72	100	17.5	28.0
2014	54	82	52	79	55	82	81	109	72	100	17.9	28.6
2015	54	82	52	79	55	82	81	109	72	100	17.9	28.6
2016	54	82	52	79	55	82	81	109	72	100	19.0	19.0
2017	54	82	52	79	55	82	81	109	72	100	19.0	19.0
2018	54	82	52	79	55	82	81	109	72	100	19.0	19.0
2019	54	82	52	79	55	82	81	109	72	100	19.0	19.0
2020	54	82	52	79	55	82	81	109	72	100	19.0	19.0
2021	54	82	52	79	55	82	81	109	72	100	19.0	19.0
2022	54	82	52	79	55	82	81	109	72	100	19.0	19.0
2023	54	82	52	79	55	82	81	109	72	100	19.0	19.0
2024	54	82	52	79	55	82	81	109	72	100	19.0	19.0
2025	54	82	52	79	55	82	81	109	72	100	19.0	19.0
2026	54	82	52	79	55	82	81	109	72	100	19.0	19.0
2027	54	82	52	79	55	82	81	109	72	100	19.0	19.0
2028	54	82	52	79	55	82	81	109	72	100	19.0	19.0
2029	54	82	52	79	55	82	81	109	72	100	19.0	19.0
2030	54	82	52	79	55	82	81	109	72	100	19.0	19.0
2031	54	82	52	79	55	82	81	109	72	100	19.0	19.0
2032	54	82	52	79	55	82	81	109	72	100	19.0	19.0
2033	54	82	52	79	55	82	81	109	72	100	19.0	19.0
2034	54	82	52	79	55	82	81	109	72	100	19.0	19.0
2035	54	82	52	79	55	82	81	109	72	100	19.0	19.0
2036	54	82	52	79	55	82	81	109	72	100	19.0	19.0
2037	54	82	52	79	55	82	81	109	72	100	19.0	19.0
2038	54	82	52	79	55	82	81	109	72	100	19.0	19.0

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Table 3
Flow Split Assumptions

Meter	Assumed Flow Split (2014-2018)
NV-01	0 – 1 %
NV-02	0 – 15 %
NV-03	0 – 10 %
NV-04	35 – 70 %
NV-05	20 – 70 %

Table 4
Addresses for Notice

If to the Board:	If to Customer:
Director Detroit Water and Sewerage Department 735 Randolph Detroit, Michigan 48226 Attention: General Counsel	City Clerk City of Novi 45175 West Ten Mile Road Novi, Michigan 48375 Cc: DPS Director 26300 Lee BeGole Drive Novi, Michigan 48375