

To: Margaret Hilton, Supervisor, Town of Hopewell
Peter Ingalsbe, Supervisor, Town of Farmington

Copy: Jeff Graff, Town Attorney
Bill Davis, MRB

From: Gregory Hotaling, P.E.

DATE: October 31, 2016

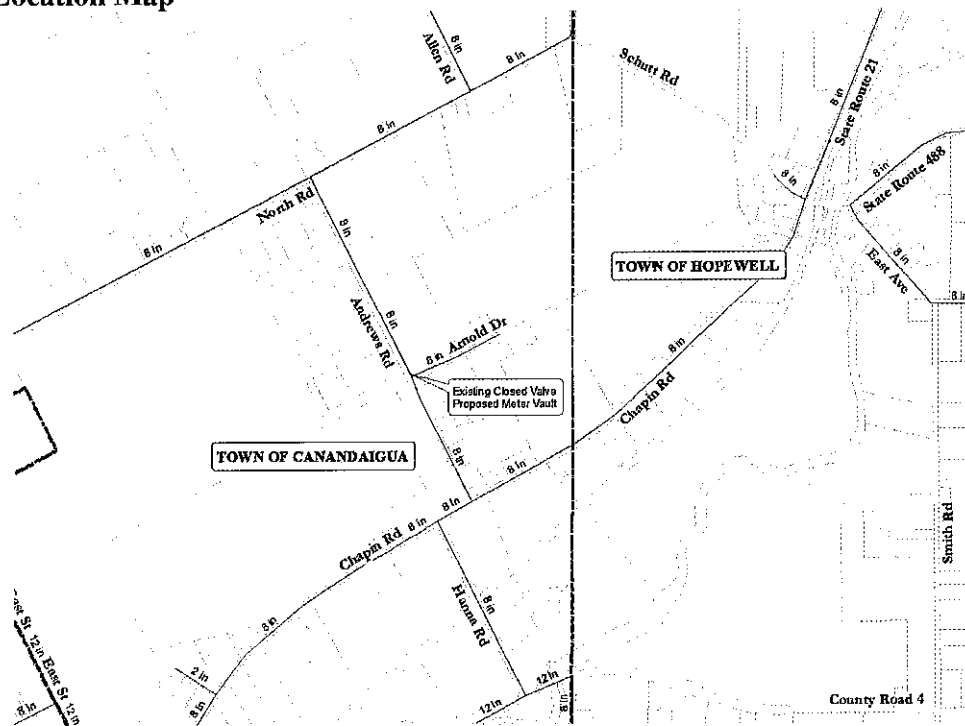
MRB GROUP PROJECT NO: 0610.16011

RE: ANDREWS ROAD METER VAULT PROJECT - MAP AND PLAN

Project Description

The Towns of Farmington/Hopewell intend to construct jointly a meter vault at the intersection of Andrews Road and Arnold Road in the Town of Canandaigua, New York. See the location map below. The meter vault is intended to eliminate dead-end water mains on Andrews Road, improve water quality and improve available fire flows in both water districts.

Location Map



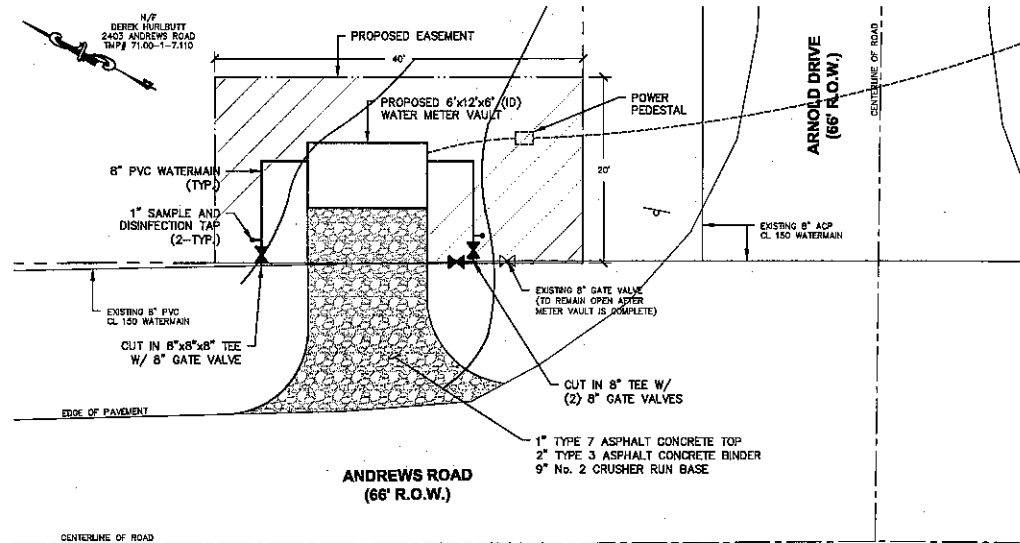
Project Benefits

The interconnection was modeled and determined to reduce the average water age and increases the available fire flow in both the Canandaigua - Farmington Water District and the Canandaigua - Hopewell Water District. The interconnection should also limit the range of water age in the system, reducing the difference between the minimum and maximum water age.

Project Costs

The following estimate was prepared on 2016 material process and the assumption that all the improvements will be installed by Town forces.

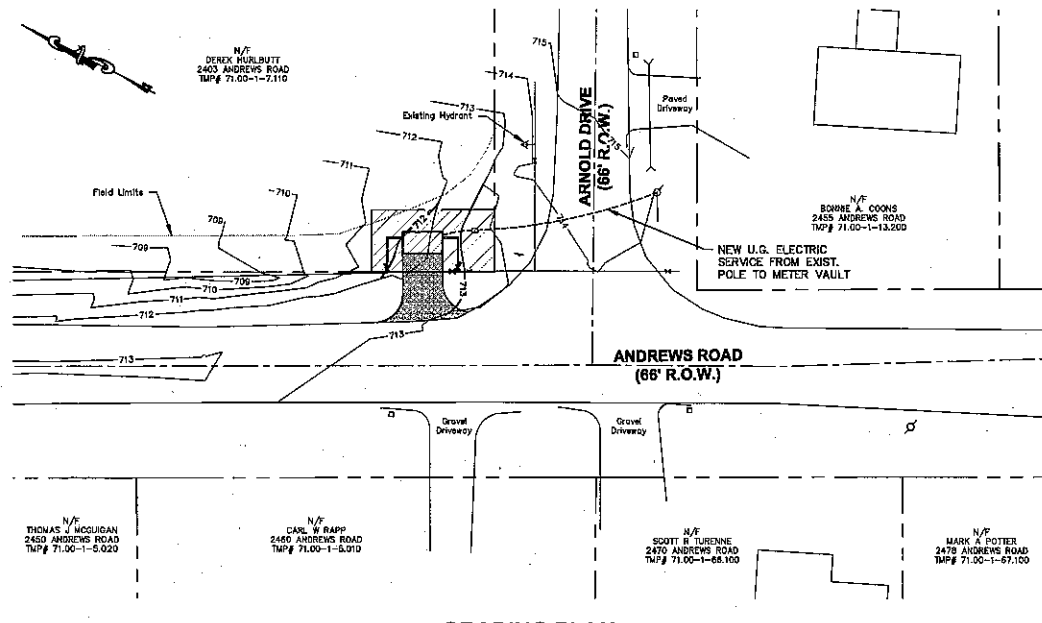
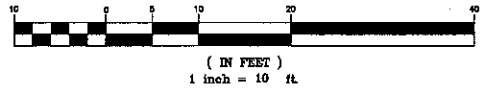
Item	Unit	Qty.	Unit Price	Amount
<u>A. Construction:</u>				
Precast Concrete Vault (ladder, sump pump, vents)	EA	1	\$10,000.00	\$10,000.00
8" TS&V	EA	2	\$4,400.00	\$8,800.00
8" - MJ 90 degree bends	EA	2	\$170.00	\$340.00
4" - FL 90 degree bends	EA	2	\$130.00	\$260.00
8" Restraining Glands for PVC	EA	4	\$60.00	\$240.00
8"x8"x4" Tee	EA	2	\$110.00	\$220.00
8"x6" Reducer	EA	2	\$130.00	\$260.00
4"x2" Reducer	EA	1	\$100.00	\$100.00
2" Mag Meter	EA	1	\$3,500.00	\$3,500.00
6" Mag Meter	EA	1	\$5,100.00	\$5,100.00
6" Control Valve	EA	1	\$3,200.00	\$3,200.00
4" Check Valve	EA	1	\$400.00	\$400.00
4" Gate Valve	EA	2	\$500.00	\$1,000.00
6" Gate Valve	EA	2	\$600.00	\$1,200.00
8" DR-18 PVC	LF	50	\$6.00	\$300.00
Vault piping (PVC)	LS	1	\$200.00	\$200.00
Flange Adapters in Vault	LS	1	\$3,400.00	\$3,400.00
Easement Acquisition	LS	1	\$1,500.00	\$1,500.00
SCADA Connection	LS	1	\$10,000.00	\$10,000.00
RG&E Hook Up	LS	1	\$5,000.00	\$5,000.00
Crushed Stone Drwy.	CY	10	\$18.00	\$180.00
Miscellaneous	LS	1	\$2,000.00	\$2,000.00
Electrical Work (subcontractor)	LS	1	\$5,000.00	\$5,000.00
Subtotal Material & Subcontractors				\$62,200.00
<u>B. +/-10% Contingency</u>				\$6,200.00
<u>C. Technical / Administration (25%)</u>				\$15,550.00
Total Project				\$83,950.00



SITE PLAN

1" = 10'

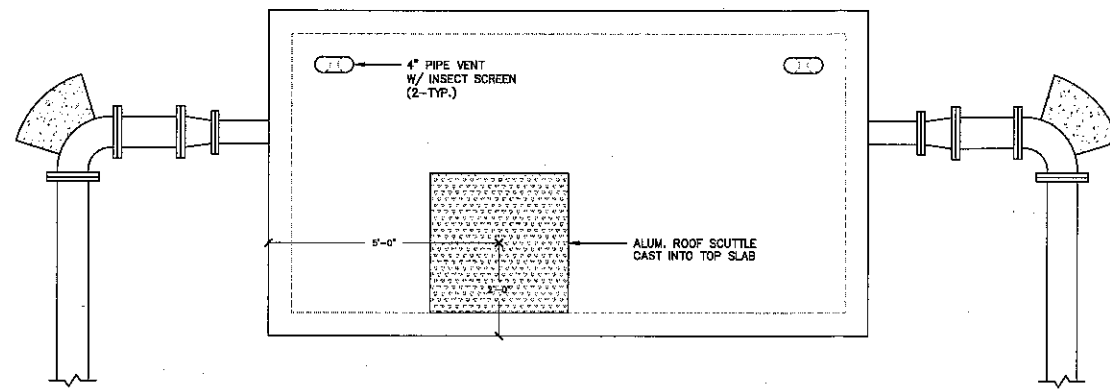
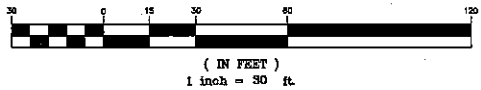
GRAPHIC SCALE



GRADING PLAN

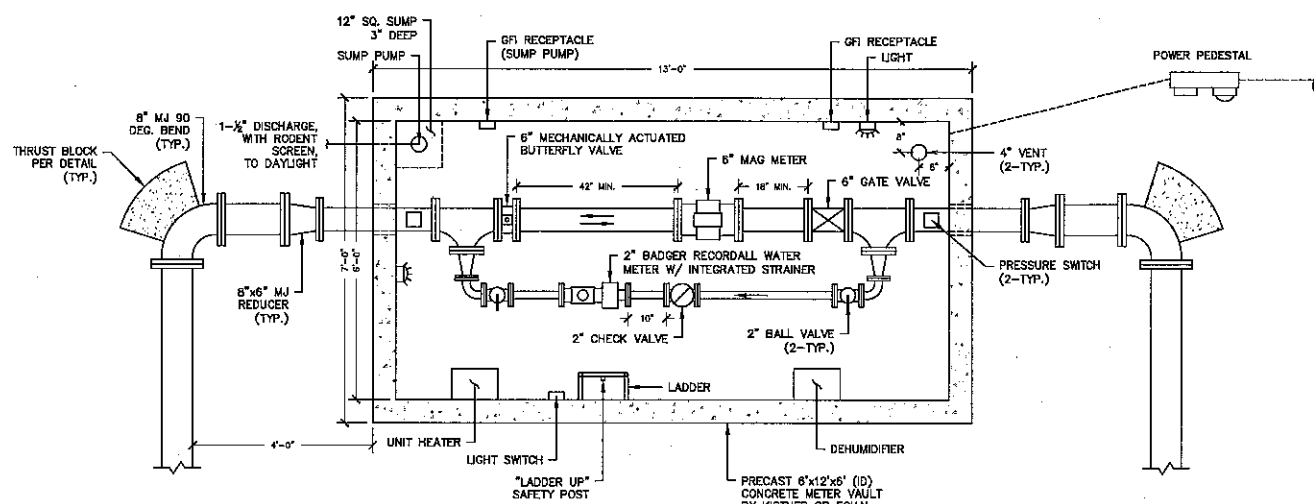
1" = 30'

GRAPHIC SCALE



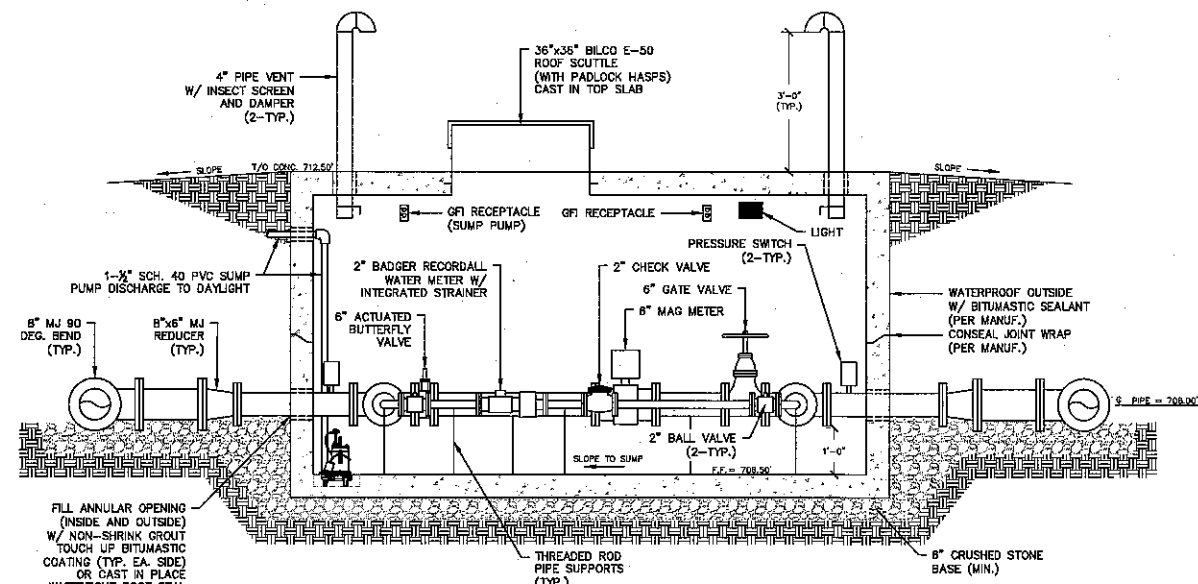
METER VAULT - TOP PLAN

1/2" = 1'-0"



METER VAULT - PLAN

1/2" = 1'-0"



METER VAULT - SECTION

1/2" = 1'-0"

DRAWING ALTERATION: THE FOLLOWING IS AN EXCERPT FROM THE NEW YORK EDUCATION LAW ARTICLE 145, SECTION 2009 AND APPLIES TO THIS DRAWING. IT IS A VIOLATION OF THE LAW FOR ANY PERSON UNLESS HE IS ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER OR LAND SURVEYOR TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE SEAL OF AN ENGINEER OR LAND SURVEYOR IS ALTERED, THE ALTERING ENGINEER OR LAND SURVEYOR SHALL ADVISE TO THE FIRM HE SEAL AND THE NOTATION "ALTERED BY" FOLLOWED BY HIS SIGNATURE AND THE DATE OF SUCH ALTERATION AND A SPECIFIC DESCRIPTION OF THE ALTERATION.

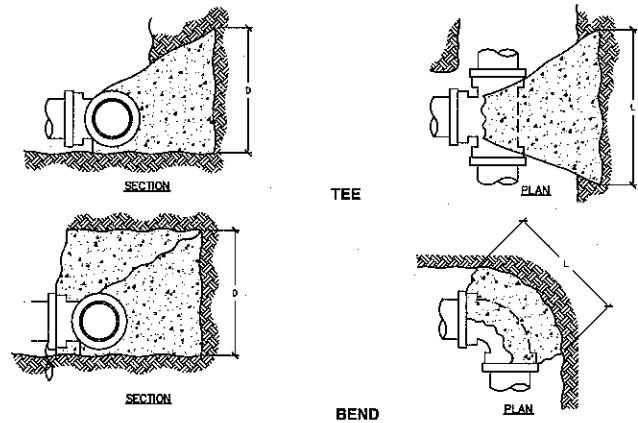
No.	Revisions and Descriptions	By	Date

Project Title: **ANDREWS ROAD METER VAULT**
TOWN OF FARMINGTON
ONTARIO COUNTY, NEW YORK
 Drawing Title: **SITE PLAN & VAULT PLAN**

Drawn By: **DAH**
 Checked By: **MAN**
 Scale: **AS SHOWN**
 Date: **NOV 2016**

MRB group
 Engineers, Architects & Surveyors, D.P.C.
 The Culver Road Armory, 148 Culver Road, Suite 101, Rochester, New York 14620
 Phone: 585-381-9250
 www.mrbgroup.com

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 Project No. **0610.16011**



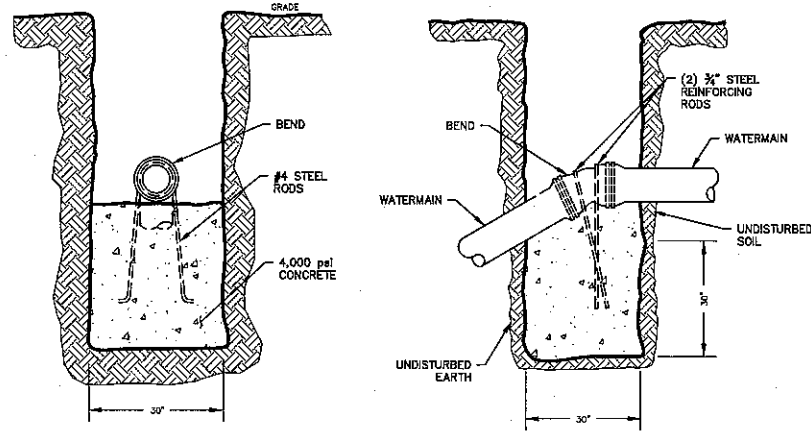
NOTES:

1. ALL DIMENSIONS ARE IN FEET.
2. BEARING AREAS ARE BASED ON ALLOWABLE SOIL BEARING PRESSURE OF 3000 PSF. (SILTY SAND)
3. HEIGHT OF THRUST BLOCK SHOULD BE EQUAL TO OR LESS THAN 1/2 THE DEPTH FROM THE GROUND SURFACE TO THE BASE OF THE BLOCK.
4. ALL THRUST BLOCKS SHALL CURE A MINIMUM OF SEVEN (7) DAYS BEFORE ANY PRESSURE TESTS ARE CONDUCTED.

PIPE SIZE (INCHES)	WORKING PRESSURE (PSIG)	TEE OR PLUG		90° BEND		45° BEND		22-1/2° BEND	
		L	D	L	D	L	D	L	D
8	150	1.67	0.75	2.00	1.00	1.50	0.67	1.50	0.67
	250	2.00	1.25	2.00	1.50	1.75	1.00	1.50	0.67
8	150	2.00	1.25	2.00	1.50	1.75	1.00	1.50	0.67
	250	2.25	1.75	3.00	2.00	2.00	1.50	1.67	1.00
12	150	2.50	1.50	2.50	2.00	2.00	1.50	2.00	1.00
	250	2.75	2.00	3.50	2.50	2.50	2.00	2.25	1.25

HORIZONTAL THRUST BLOCK DETAIL

N.T.S.

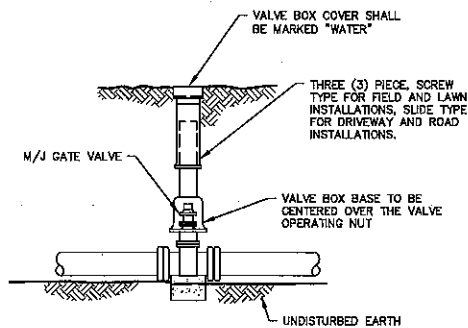


NOTE:

RESTRAINING RODS MAY BE USED IN LIEU OF THRUST BLOCKS. METHOD TO BE USED SHALL BE APPROVED BY THE ENGINEER PRIOR TO PLACEMENT.

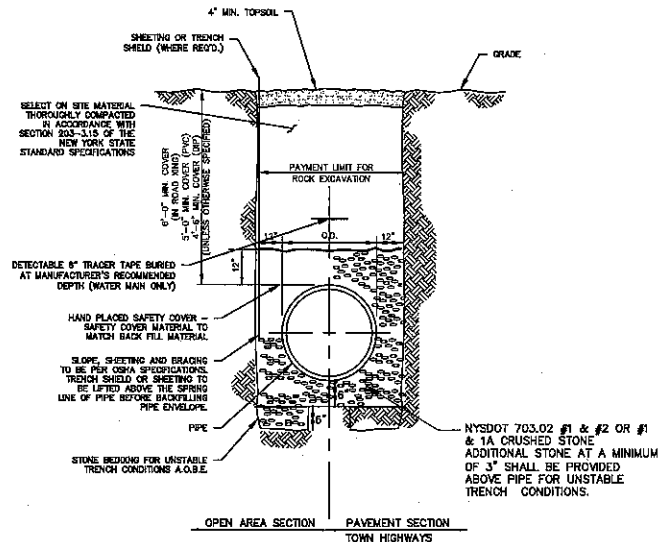
VERTICAL THRUST BLOCK DETAIL

N.T.S.



VALVE BOX DETAIL

(N.T.S.)

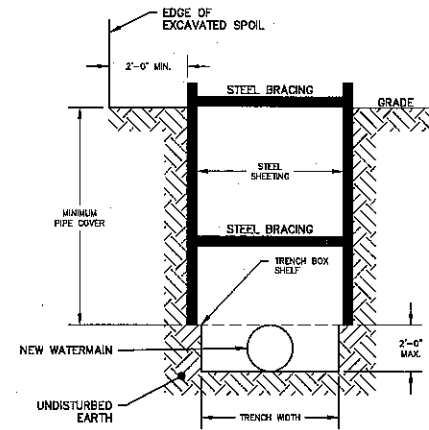


NOTE:

CONTRACTOR SHALL USE AN ADEQUATE EXCAVATION PROTECTION SYSTEM SUFFICIENT IN SIZE AND STRENGTH TO MEET THE REQUIREMENTS OF TITLE 29, CODE OF FEDERAL REGULATIONS, PART 1926, SAFETY AND HEALTH REGULATION FOR CONSTRUCTION (OSHA)

WATERMAIN TRENCH DETAIL

N.T.S.



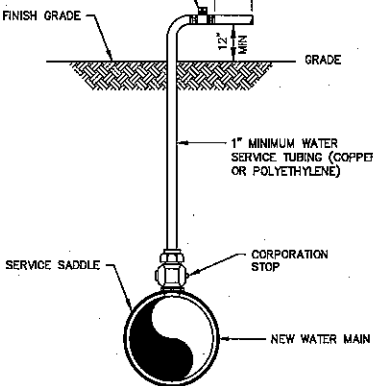
TRENCH BOX (SHIELD) DETAIL

NOTES:

1. TRENCH EXCAVATION AND SHIELDING MUST CONFORM TO OSHA STANDARDS.
2. SHEETING AND BRACING TO BE CONSTRUCTED OF STEEL CONFORMING TO ASTM A36/A36M.
3. CONNECTING BOLTS USED TO CONFORM TO ASTM A307.
4. WELDS SHALL CONFORM TO AWS D1.1 REQUIREMENTS.
5. TRENCH BOX LENGTH NOT LESS THAN FULL PIPE LENGTH.

DISINFECTION/SAMPLING TAP/BLOW-OFF

N.T.S.



NOTE:

UPON NOTIFICATION FROM THE HEALTH DEPARTMENT THAT A SATISFACTORY WATER SAMPLE HAS BEEN OBTAINED, SHUT DOWN CORPORATION STOP AND REMOVE THE SERVICE TUBING.

IMMEDIATELY PRIOR TO PLACING THE WATER MAIN IN SERVICE THE CONTRACTOR SHALL REMOVE ALL CORPORATIONS ASSOCIATED WITH TEMPORARY FACILITIES (I.E. SAMPLING TAPS, ETC.) AND REPLACE WITH THREADED BRASS PLUGS.

FOR DISINFECTION/SAMPLING TAPS THAT ARE NOT NEEDED TO BLOW-OFF, 1" DISINFECTION/SAMPLING TAPS ARE ACCEPTABLE.

LINE VALVE ANCHOR DETAIL

(TYPICAL FOR ALL LINE VALVES)

WATER NOTES

(Standard Conditions)

1. MATERIALS -

- POLYVINYL CHLORIDE (PVC) PIPE** MUST BE WITH INTEGRAL BELL AND SPIGOT JOINTS, CLASS 150, DR 18, CONFORMING WITH THE LATEST REVISION OF ANSI/AWWA C900 (FOR 4" - 12" PIPE) OR C905 (FOR LARGER PIPE), C906 FOR POLYETHYLENE PRESSURE PIPE AND C900 FOR DUCTILE IRON PIPE STANDARD.
 - GATE VALVES** SHALL CONFORM TO AWWA SPECIFICATION C-509 OR C-515 LATEST REVISION AND SHALL HAVE NON-RISING STEMS, "O" RING PACKING AND SHALL OPEN LEFT. ALL VALVES SHALL HAVE MECHANICAL JOINT ENDS AND BE FURNISHED WITH SUFFICIENT QUANTITIES OF ACCESSORIES. VALVES SHALL BE CLOW, MUELLER, KENNEDY OR APPROVED EQUAL. ALL VALVES TO HAVE STAINLESS STEEL BONNET BOLTS.
 - TAPPING SADDLES** ARE REQUIRED FOR ALL SERVICES OFF THE P.V.C. WATER MAIN. THEY SHALL BE DOUBLE BOLT, STAINLESS STEEL STRAPS MATCHED TO THE OUTSIDE DIAMETER OF THE PIPE. THEY MUST BE PROVIDED WITH AN "O" RING GASKET CEMENTED IN PLACE FOR A PRESSURE-TIGHT SEAL ON THE MAIN, MINIMUM 7" BAND WIDTH. SMITH-BLAIR 372, CASCADE CSC2, OR APPROVED EQUAL.
 - WATER SERVICE PIPE** SHALL BE 1" POLYETHYLENE, PE3408, DR-9 ACCORDING TO AWWA 901-05.
 - WATER METER** SHALL BE M-5000 MAGMETER BY MOOMAG WITH 2" RECORDALL MODEL 200 TURBOMETER BY BADGER METER.
 - BUTTERFLY VALVE** SHALL BE FLANGED, RUBBER SEATED, PRATT MODEL 2F11.
 - ELECTRIC ACTUATOR** SHALL BE ROTORK Q-PAK 1P00000, POWERED BY 110V/1P/60Hz ELECTRIC SUPPLY
 - PRESSURE SWITCHES** SHALL BE AB BULLETIN B36 PRESSURE CONTROL SWITCHES
- DEPTH** - MINIMUM DEPTH OF WATER MAINS SHALL BE 5 FEET.
 - FLUSHING/PRESSURE AND LEAKAGE TESTING** - WATER PIPING SHALL BE FLUSHED AND TESTED IN CONFORMANCE WITH THE LATEST REVISION OF ANSI/AWWA C605 FOR PVC AND HDPE PIPE, AND C600 FOR DUCTILE IRON PIPE.
 - DISINFECTION** - THE PROPOSED WORKS MUST FOLLOW ANSI/AWWA C651 STANDARD, TABLET METHOD EXCEPTED. FOLLOWING FLUSHING AND TESTING, THE ENGINEER SHALL OVERSEE COLLECTION OF AN APPROPRIATE NUMBER OF BACTERIOLOGICAL SAMPLES FOR TOTAL AND FECAL COLIFORM AND FOR STANDARD BACTERIAL PLATE COUNT AFTER THE FIELD FREE CHLORINE RESIDUAL IS LESS THAN 1.5 PPM AND THE SAMPLING POINTS HAVE BEEN DECONTAMINATED. TWO SETS OF SAMPLES, TAKEN 24 HOURS APART, AT EACH SAMPLING POINT SHALL BE TAKEN, SHOWING ACCEPTABLE RESULTS. PRIOR TO SAMPLING, THE ENGINEER SHALL COORDINATE THE APPROPRIATE NUMBER AND LOCATION OF SAMPLES TO BE COLLECTED WITH THE COUNTY OR STATE HEALTH DEPARTMENT HAVING JURISDICTION.
 - PLACING INTO OPERATION** - THE COMPLETED WORKS SHALL NOT BE PLACED INTO SERVICE UNTIL AN APPROVAL OF COMPLETED WORKS FORM IS ISSUED BY THE STATE HEALTH DEPARTMENT. PRIOR TO ISSUANCE, A NYS LICENSED PROFESSIONAL ENGINEER MUST SUBMIT CERTIFICATION THAT: THEY OR THEIR DESIGNATED REPRESENTATIVE WITNESSED THAT CONSTRUCTION WAS IN CONFORMANCE WITH THE PLANS AS APPROVED; FLUSHING, TESTING, AND DISINFECTION PROCEDURES NOTED HEREIN HAD BEEN PROPERLY PERFORMED; AND, MICROBIOLOGICAL SAMPLE RESULTS FROM THE COMPLETED WORKS WERE ACCEPTABLE. COPIES OF THE OFFICIAL LABORATORY RESULTS ARE TO BE INCLUDED WITH THE CERTIFICATION.
 - EROSION** - ADEQUATE CONTROL MEASURES SHALL BE EMPLOYED DURING ALL PHASES OF CONSTRUCTION IN ACCORDANCE WITH ALL APPROPRIATE STANDARDS AND REQUIREMENTS. BEST MANAGEMENT PRACTICES ARE TO BE FOLLOWED.
 - FILL AREAS** - WHERE PIPING IS TO BE PLACED WITHIN FILL AREAS, THE FILL SHALL BE PLACED AND COMPACTED TO AT LEAST 95% MODIFIED PROCTOR PRIOR TO TRENCH EXCAVATION.

LINE VALVE ANCHOR DETAIL

(TYPICAL FOR ALL LINE VALVES)

N.T.S.

NOTES:

1. MECHANICAL RESTRAINTS MAY BE USED IN LIEU OF THRUST BLOCKS

DRAWING ALTERATION
THE FOLLOWING IS AN EXCERPT FROM THE NEW YORK EDUCATION LAW ARTICLE 145 SECTION 7208 AND APPLIES TO THIS DRAWING.
"IT IS A VIOLATION OF THIS LAW FOR ANY PERSON UNLESS HE IS A LICENSED PROFESSIONAL ENGINEER OR LAND SURVEYOR TO ALTER AN ITEM IN ANY MANNER IF AN ITEM BEARING THE SEAL OF AN ENGINEER OR LAND SURVEYOR IS ALTERED. THE ALTERING ENGINEER OR LAND SURVEYOR SHALL APPLY TO THE ITEM HIS SEAL AND THE NOTATION ALTERED BY FOLLOWED BY HIS SIGNATURE AND THE DATE OF SUCH ALTERATION AND A BRIEF DESCRIPTION OF THE ALTERATION."

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TOWN OF FARMINGTON
ONTARIO COUNTY, NEW YORK

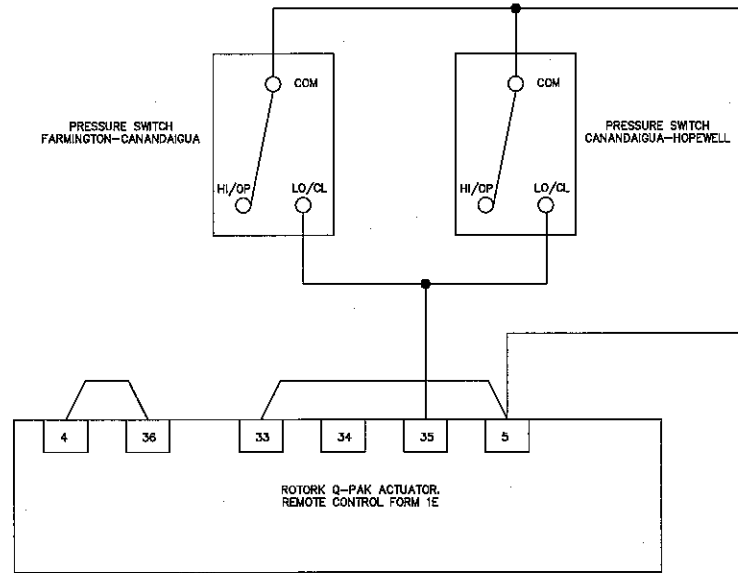
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MRB group
Engineering, Architecture & Surveying, D.P.C.
The Culver Road Armory, 145 Culver Road, Suite 100, Rochester, New York 14620
Phone: 585-381-9250
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Project No. **0610.16011**

Details and Notes



NOTES:

1. CONTRACTOR TO LINK TERMINAL 4 TO 36.
2. CONTRACTOR TO LINK TERMINAL 5 TO 33.
3. PCB SELECTOR SWITCHES 6 & 7 SET TO OFF.
4. SEQUENCE OF OPERATION:
 - PRESSURE SWITCHES ARE NORMALLY OPEN (NO) AT HIGH PRESSURE
 - ON LOSS OF PRESSURE, SWITCH CHANGES STATE AND CLOSES MAKING CIRCUIT TO ENERGIZE ACTUATOR TO OPEN VALVE
 - ON RETURN TO NORMAL PRESSURE, SWITCH CHANGES STATE TO NO ONCE MORE.
 - ANY SWITCH IN LOW PRESSURE CONDITION WILL ENERGIZE ACTUATOR VALVE.
 - BOTH SWITCHES MUST BE IN NORMAL (HI) PRESSURE CONDITION FOR ACTUATOR TO BE DE-ENERGIZED AND VALVE TO CLOSE.

PRESSURE SWITCH CONTROL OF VALVE ACTUATOR

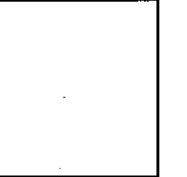
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No.	Revisions and Descriptions	By	Date

Project Title: **ANDREWS ROAD METER VAULT
TOWN OF FARMINGTON
ONTARIO COUNTY, NEW YORK**

Drawing Title: **DETAILS AND NOTES**

Drawn By: JLS/DAH
Checked By: MAM
Scale: AS SHOWN
Date: NOV 2016



MRB group
Engineering, Architecture & Surveying, D.P.C.
The Culver Road Amenity, 145 Culver Road, Suite 100, Rochester, New York 14620
Phone: 585-381-9259
www.mrbgroup.com

Sheet No. **D-2**
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