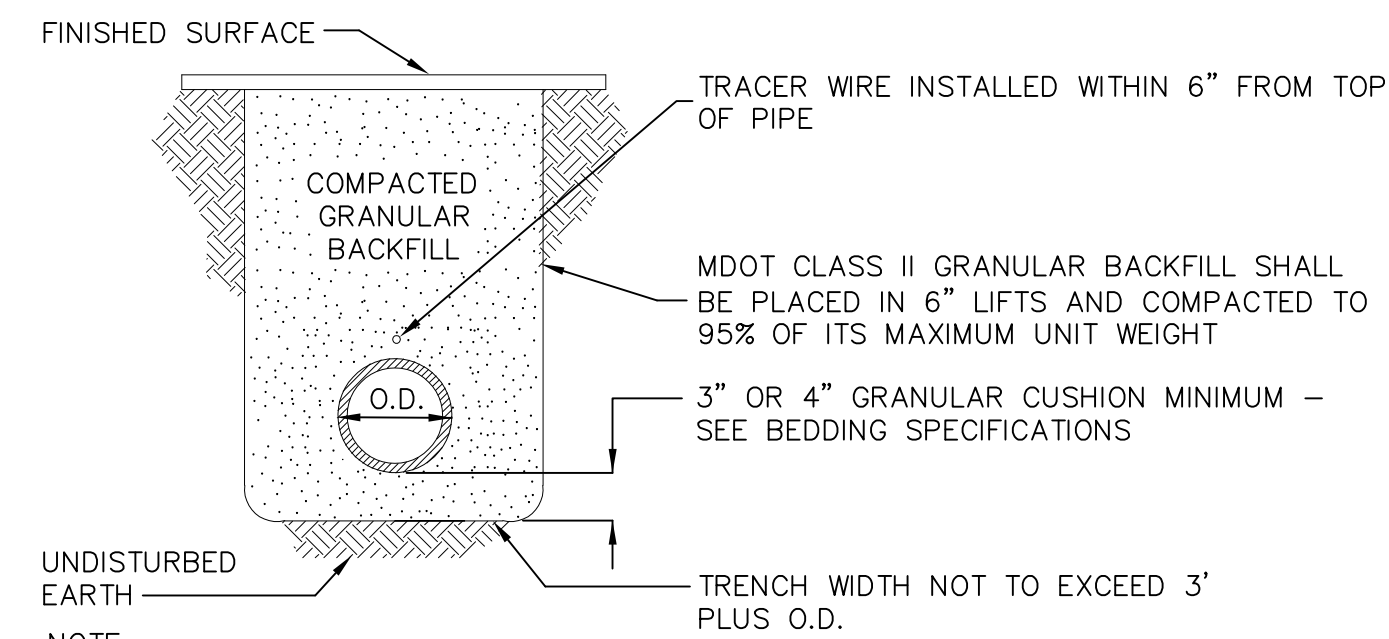


NOTE:
TRENCH A SHALL BE USED UNDER ALL CONDITIONS IN WHICH TRENCH B DOES NOT APPLY.

TRENCH A



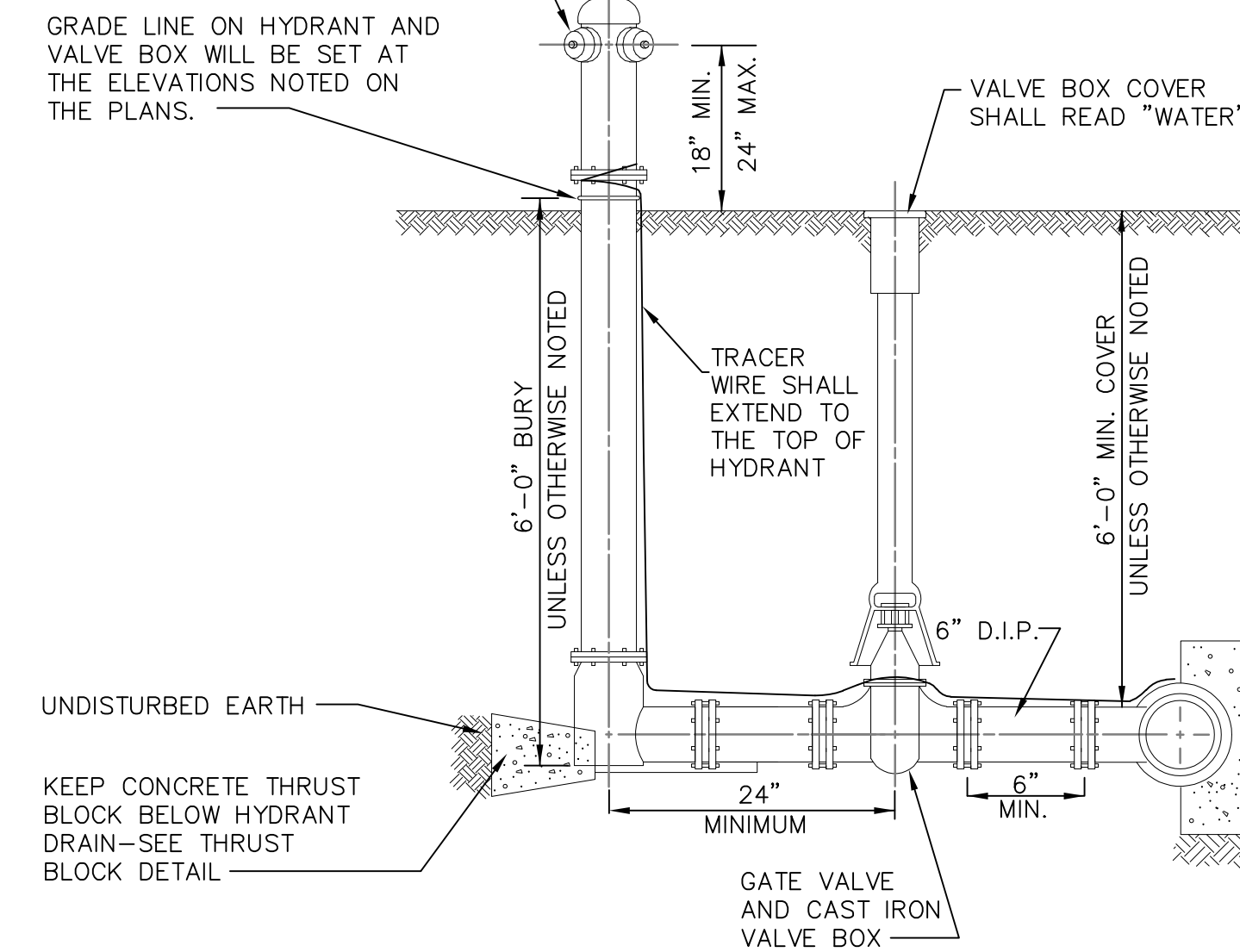
NOTE:
TRENCH B SHALL BE USED UNDER ALL PAVEMENT CONDITIONS, SIDEWALK, CURB, & GUTTER, AND WHERE PIPE BOTTOM IS WITHIN 1 ON 1 INFLUENCE OF PAVEMENT.

TRENCH B

TRENCH BEDDING AND BACKFILL

NORTHVILLE
WM-2
REV. 10/96

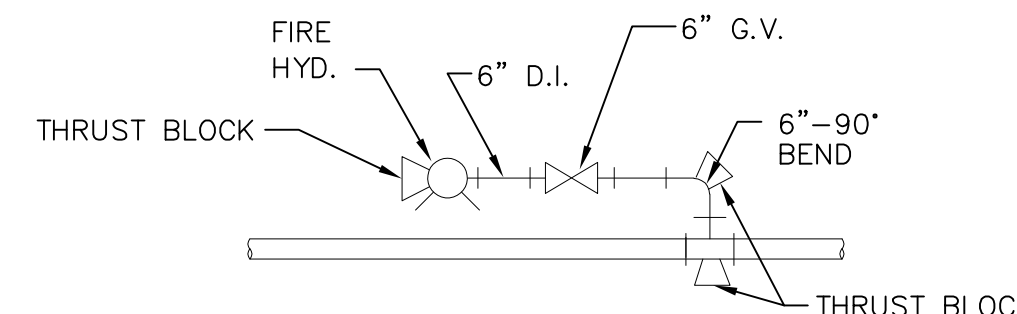
EAST JORDAN WATERMASTER 5BR250 WITH BREAKAWAY TRAFFIC FLANGE AND COUNTER CLOCKWISE OPEN TO BE USED IN ALL AREAS. CONNECTIONS MUST FACE STREET UNLESS OTHERWISE DIRECTED BY FIRE CHIEF, TWP., OR TWP. ENGR.



CROSS SECTION

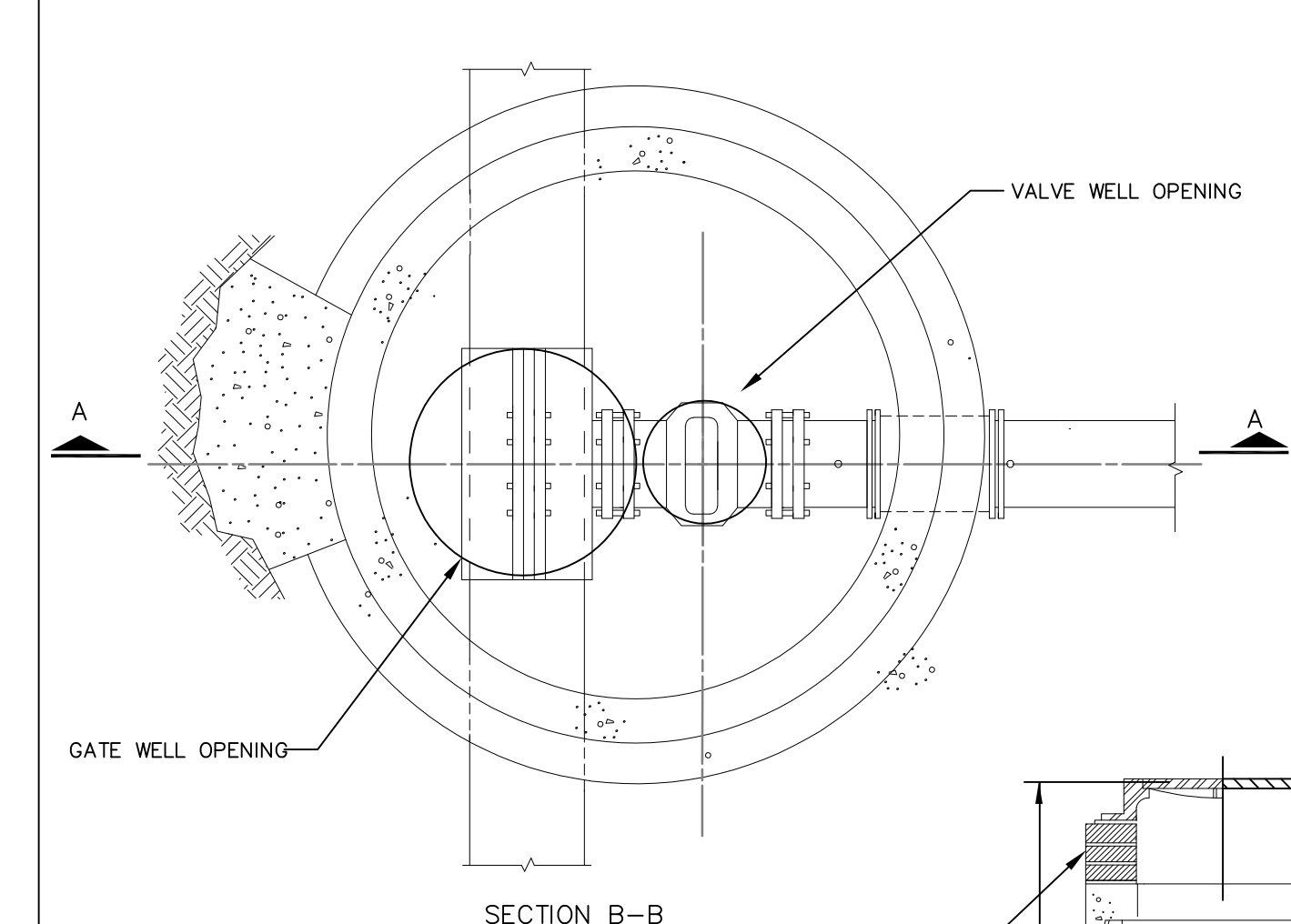
STANDARD FIRE HYDRANT

NORTHVILLE
WM-1
REV. 1/95

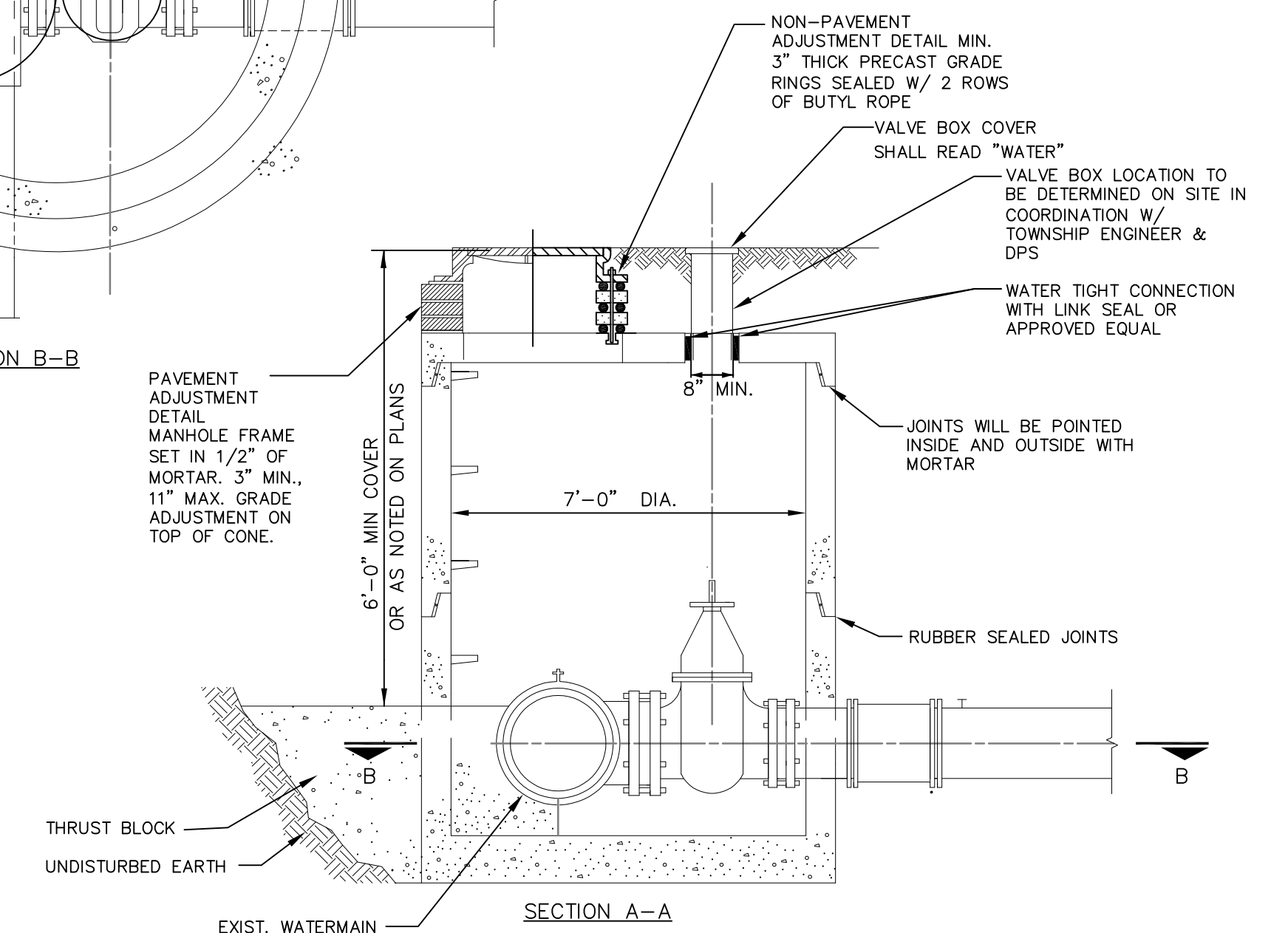


SCHEMATIC OF HYDRANT PARALLEL TO MAIN

NOTE:
PROVIDE ONE INTEGRAL STORTZ CONNECTION ON THE RIGHT NOZZLE WHEN FACING THE HYDRANT.



7 FOOT DIAMETER TAPPING GATE WELL



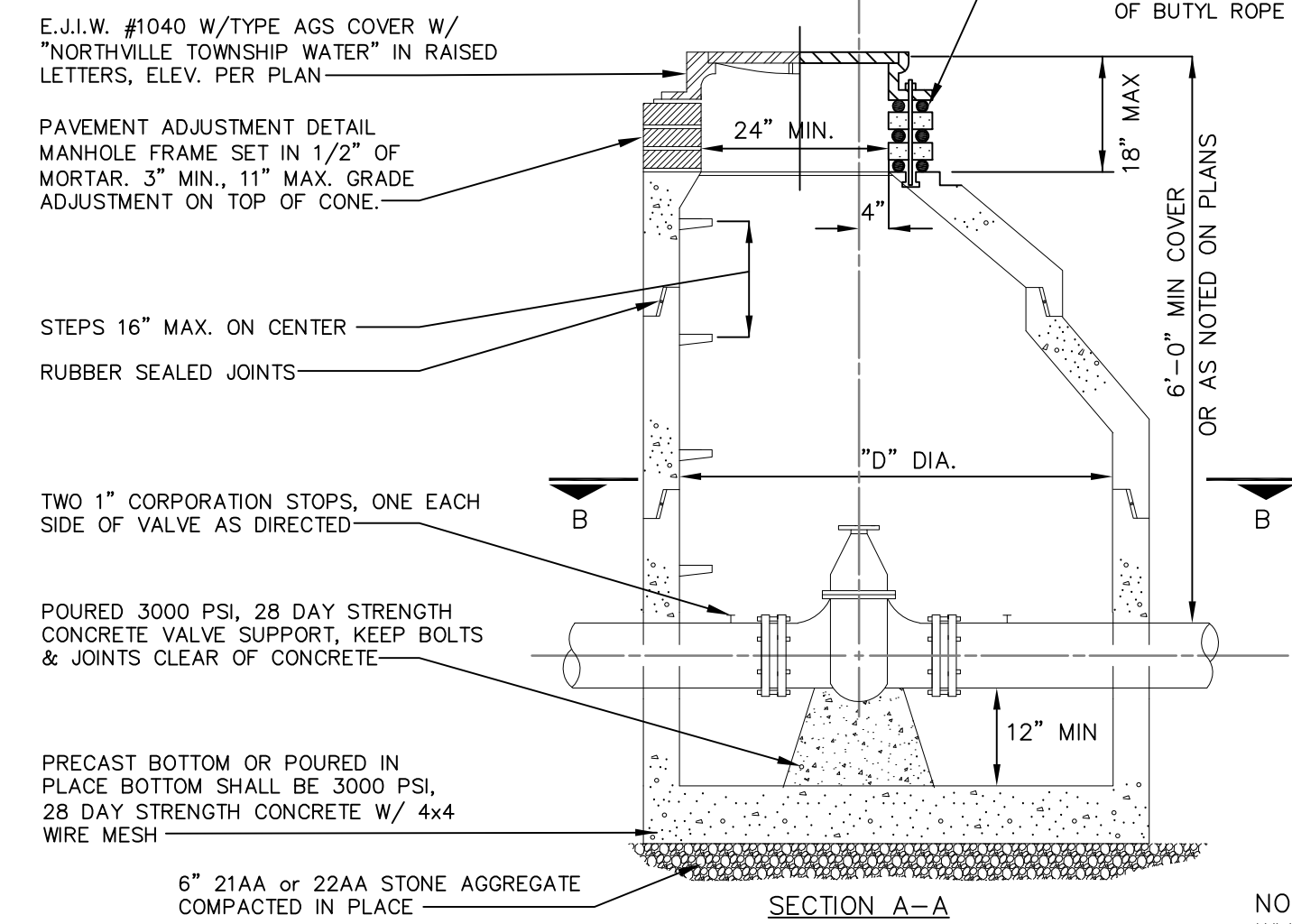
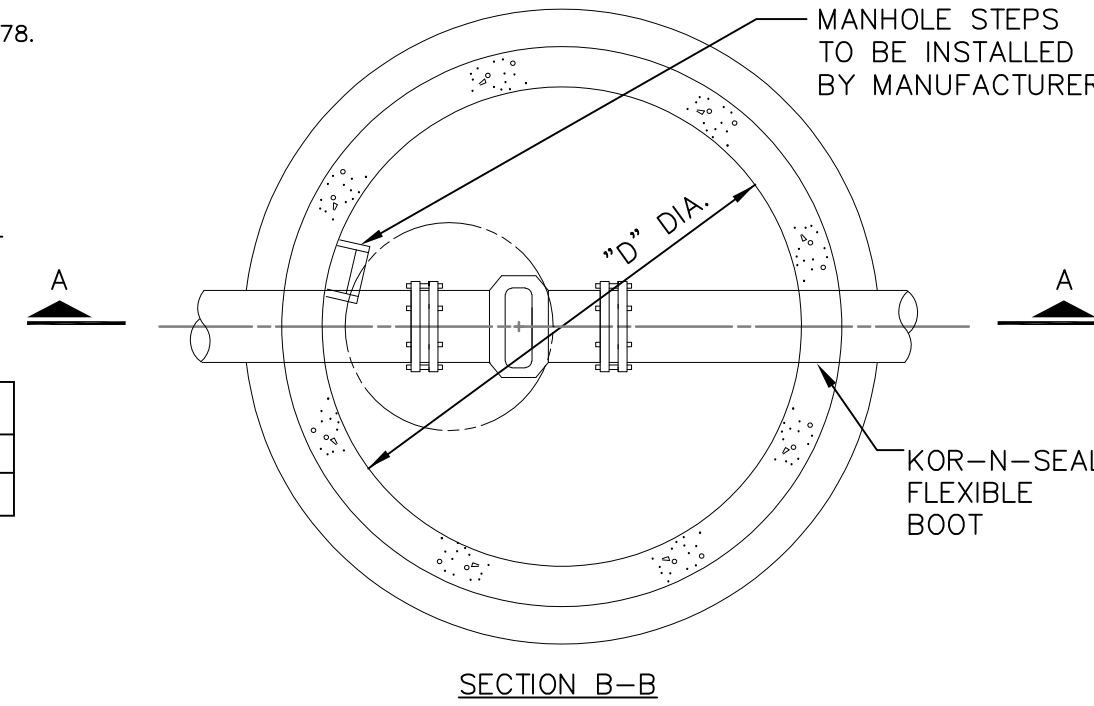
GATEWELL NOTES

1. SECTIONS SHALL MEET ASTM C478.
2. ALL JOINTS MADE WATERTIGHT WITH RUBBER GASKET JOINTS.
3. GATEWELL TO HAVE FLAT TOP WITH ECCENTRIC OPENING.

GATEWELL NOTES

1. SECTIONS SHALL MEET ASTM C478.
2. ALL JOINTS MADE WATERTIGHT WITH RUBBER GASKET JOINTS.
3. FOR 6" GATEWELL, CONE TO BE ECCENTRIC TYPE.
4. FOR 7" GATEWELL PROVIDE FLAT TOP WITH OFFSET OPENING.

VALVE SIZE	D
10" & UNDER	5'-0"
12"	6'-0"



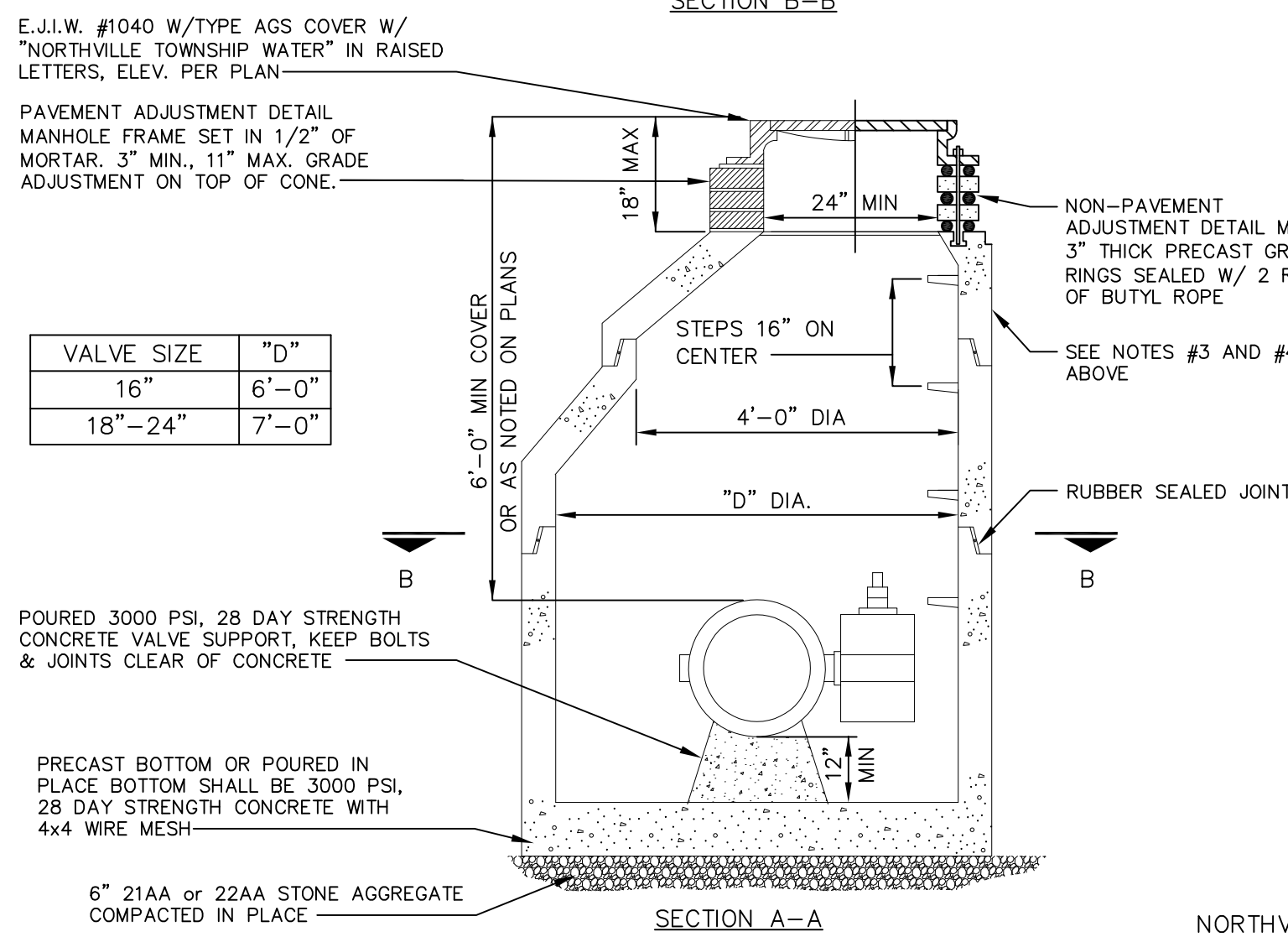
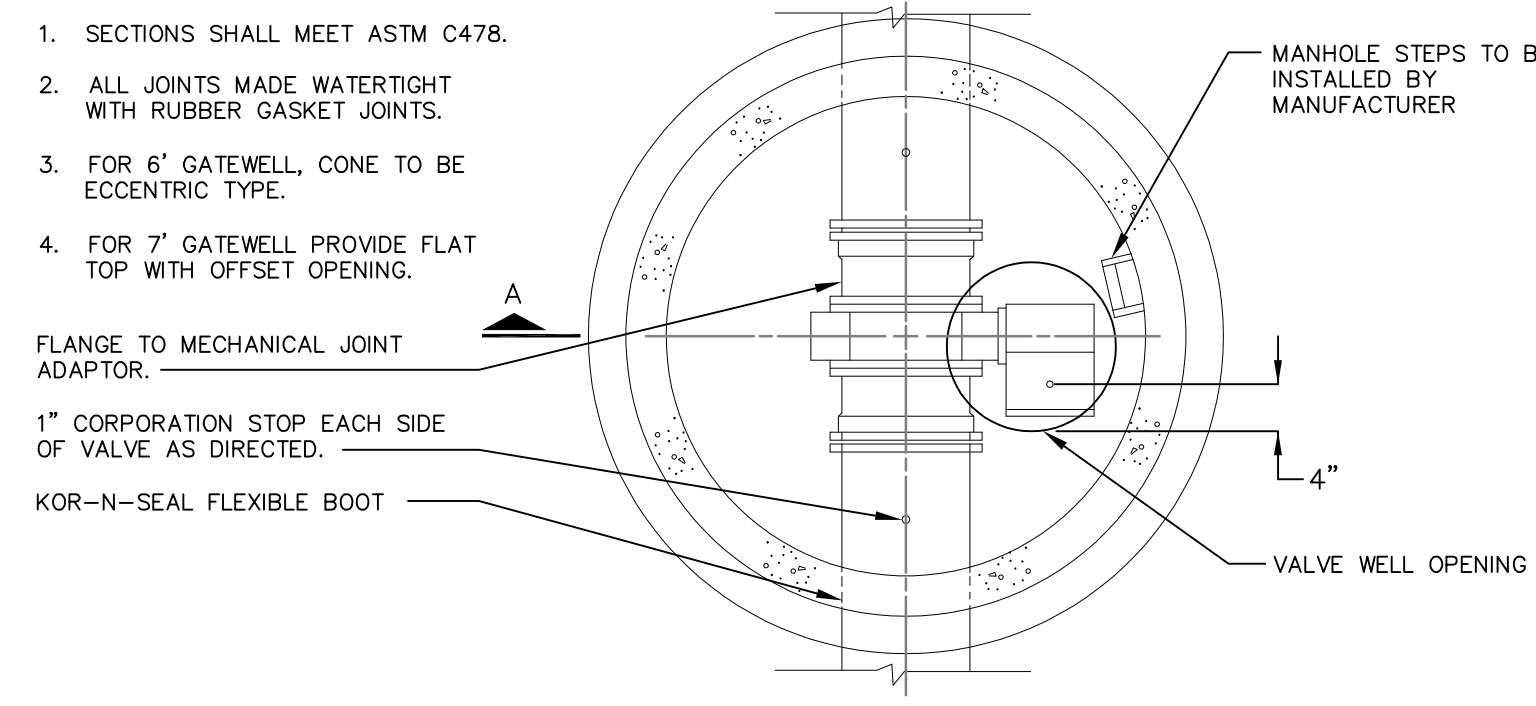
STANDARD GATE VALVE & WELL

NORTHVILLE
WM-4
REV. 01/13

GATEWELL NOTES

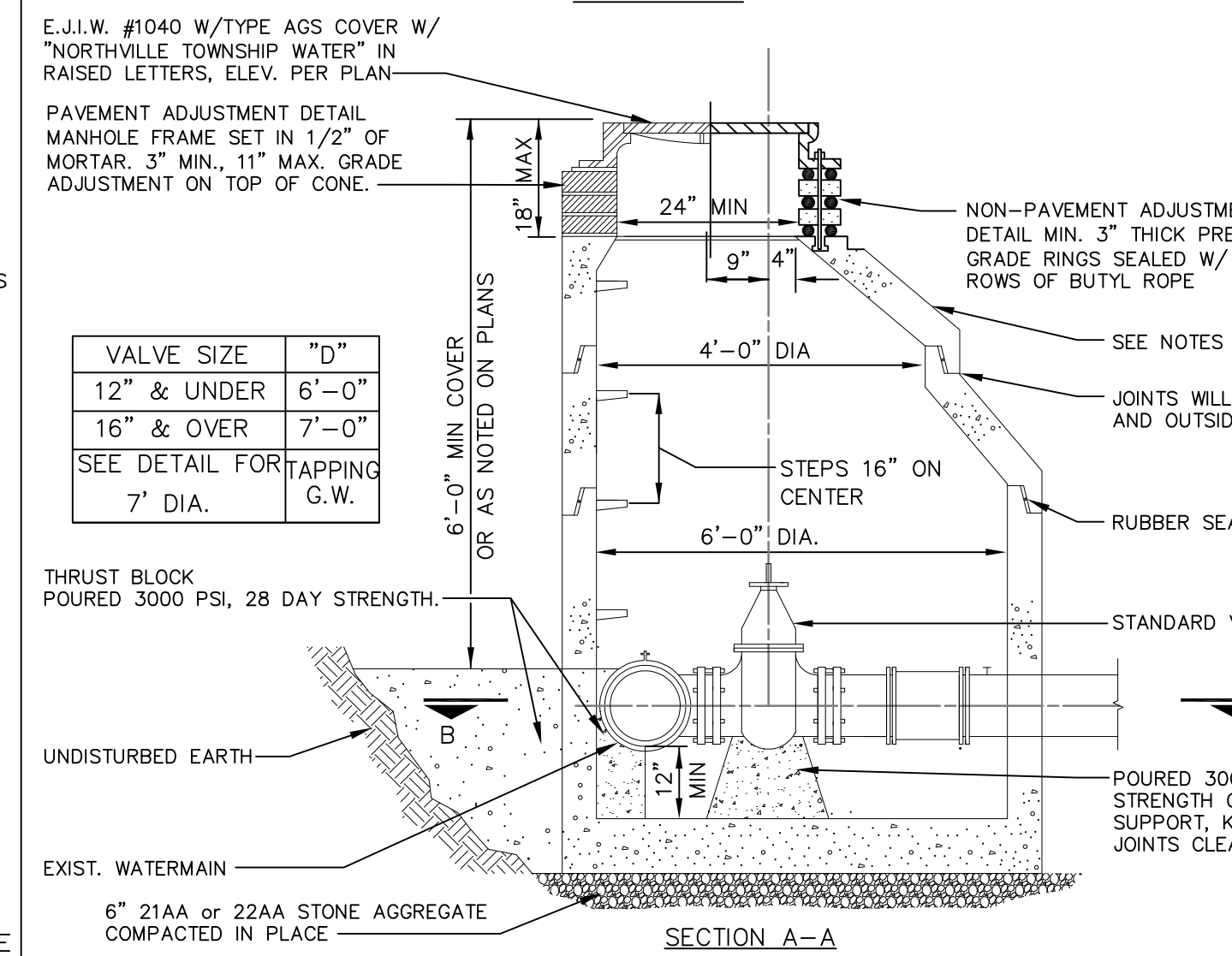
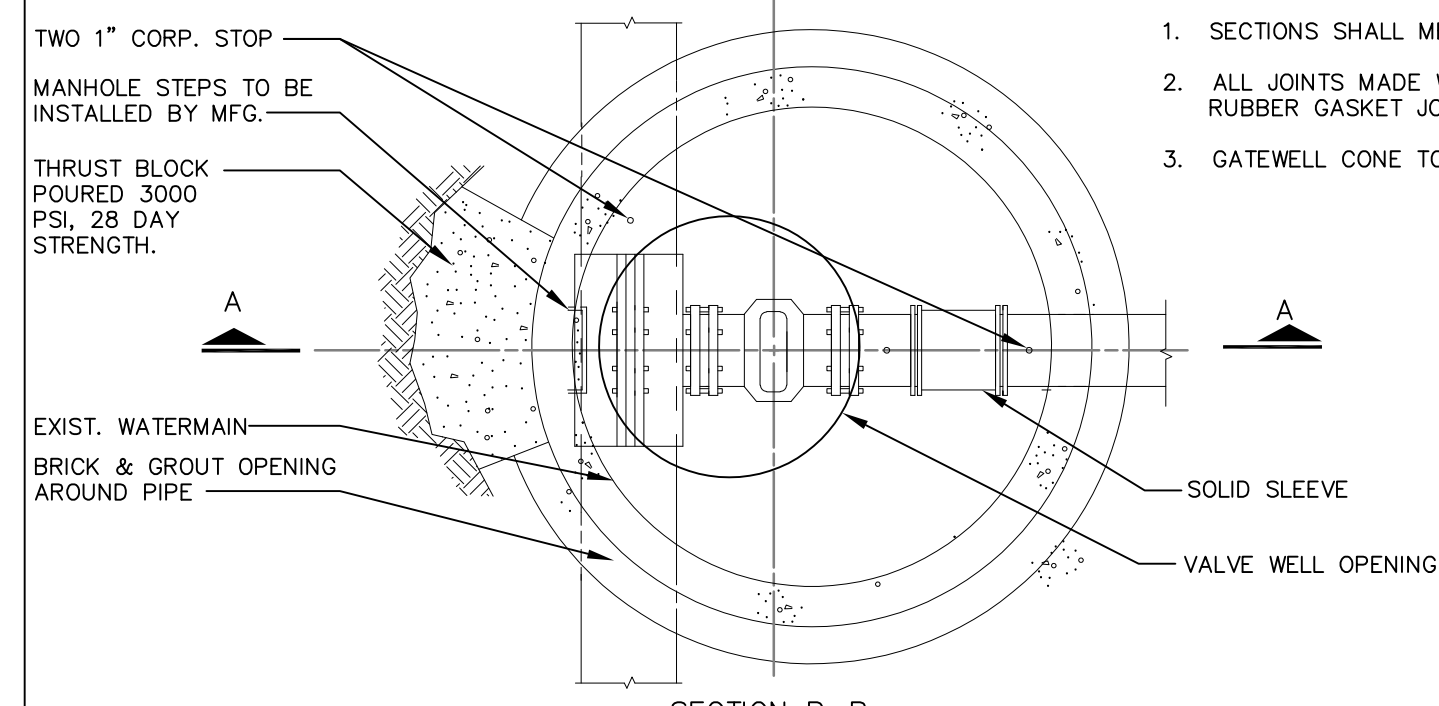
1. SECTIONS SHALL MEET ASTM C478.
2. ALL JOINTS MADE WATERTIGHT WITH RUBBER GASKET JOINTS.
3. FOR 6" GATEWELL, CONE TO BE ECCENTRIC TYPE.
4. FOR 7" GATEWELL PROVIDE FLAT TOP WITH OFFSET OPENING.

VALVE SIZE	"D"
16"	6'-0"
18"-24"	7'-0"



STANDARD BUTTERFLY VALVE & WELL

NORTHVILLE
WM-5
REV. 12/13



6 FOOT DIAMETER TAPPING GATE WELL

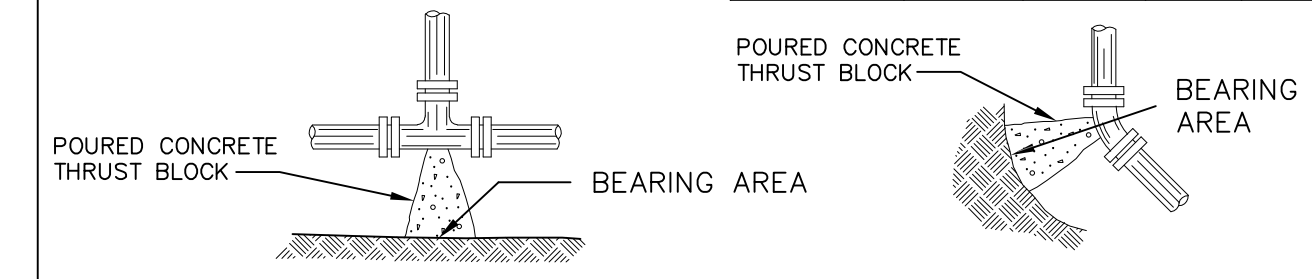
NORTHVILLE
WM-6
REV. 12/13

GATEWELL NOTES

1. SECTIONS SHALL MEET ASTM C478.
2. ALL JOINTS MADE WATERTIGHT WITH RUBBER GASKET JOINTS.
3. GATEWELL CONE TO BE ECCENTRIC TYPE.

PIPE DIA. INCHES	BEARING AREA SQUARE FEET
4	1.5
6	2.9
8	4.8
10	7.1
12	10.0
16	17.1
18	21.0
20	26.0
24	36.0

PIPE DIA. INCHES	BEARING AREA SQUARE FEET			
	90'	45'	22 1/2'	11 1/4'
4	2.1	1.1	0.6	0.3
6	4.1	2.2	1.1	0.6
8	6.8	3.7	1.9	0.9
10	10.1	5.5	2.8	1.4
12	14.1	7.6	3.9	2.0
16	24.2	13.0	6.7	3.3
18	30.0	16.3	8.3	4.2
20	36.8	19.9	10.1	5.1
24	52.0	30.0	20.2	6.0



NOTES:

1. CONCRETE FOR ALL THRUST BLOCKS SHALL BE 3000 PSI, 28 DAY STRENGTH MIN.
2. ALL THRUST BLOCKS SHALL BE POURED AGAINST UNDISTURBED EARTH
3. BOLTS, FITTINGS & JOINTS SHALL BE KEPT CLEAR OF CONCRETE
4. A BEARING CAPACITY OF 2000# PER FOOT WAS USED IN DETERMINING THE MINIMUM "BEARING AREAS" IN THE ABOVE TABLE
5. THE CROSS SECTION OF THE THRUST BLOCKS SHALL BE SQUARE
6. ENGINEERS ARE REQUIRED TO CALCULATE THE THRUST RESTRAINED PIPE LENGTH FOR THEIR INDIVIDUAL SITE & FITTINGS. CALCULATIONS SHALL CONFORM TO DIPRA DESIGN FOR THRUST RESTRAINT.

SOIL CHARACTERISTICS	FACTOR
(A) LOOSE COARSE OR MEDIUM SAND; COMPACT FINE SAND; COMPACT SAND-CLAY SOILS; STIFF CLAY	0.33
(B) FIRM FINE SAND; COMPACT INORGANIC SILT; FIRM SAND-CLAY SOILS; MEDIUM CLAY	0.50
(C) LOOSE FINE SAND; FIRM INORGANIC SILT	0.67
(D) LOOSE SAND-CLAY SOILS; LOOSE INORGANIC SILT SOFT CLAY	1.00

"BEARING AREA" x FACTOR = ACTUAL BEARING AREA
2.1 x .5 = 1.05 SQ. FT.
BASED UPON 150# TEST PRESSURE

THRUST BLOCK

NORTHVILLE
WM-3
REV. 12/13

3 WORKING DAYS
BEFORE YOU DIG
CALL MISS DIG
1-800-482-7171
FOR FREE LOCATION OF PUBLIC UTILITY LINES

REV. 8	12/13	REVISED THRUST BLOCK SPECIFICATION
REV. 7	01/13	REVISED THRUST BLOCK SPECIFICATION
REV. 6	02/09	REVISED HYDRANT SPECIFICATION
REV. 5	08/08	UPDATED TRENCH DETAIL FOR TRACE WIRE
REV. 4	08/07	UPDATED PER TOWNSHIP
REV. 3	2/98	REVISED HYDRANT SPECIFICATION
REV. 2	11/96	ADOPTED WCDPS TRENCH REQUIREMENTS
DRAWN BY: C.J.M.G., J.L.P.		CHECKED BY: K.C.M., T.M.M.



CHARTER TOWNSHIP OF NORTHVILLE

WATER MAIN DETAILS

STANTEC
3754 RANCHERO DRIVE
ANN ARBOR, MI 48108
(734) 761-1010
stantec.com
SCALE: NONE
FILE: W-3.DWG
REVISION
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