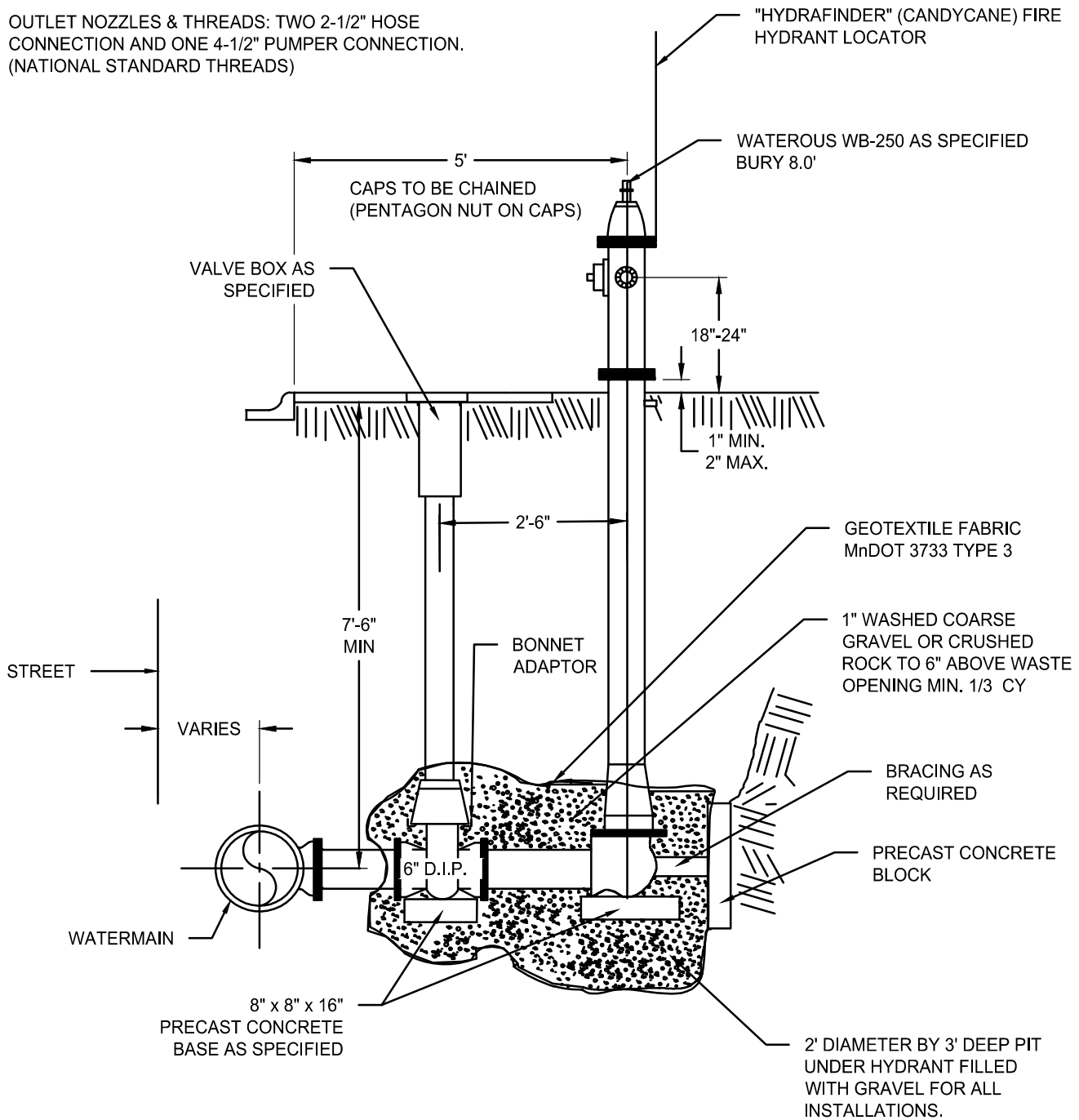


OUTLET NOZZLES & THREADS: TWO 2-1/2" HOSE CONNECTION AND ONE 4-1/2" PUMPER CONNECTION. (NATIONAL STANDARD THREADS)



NOTES:

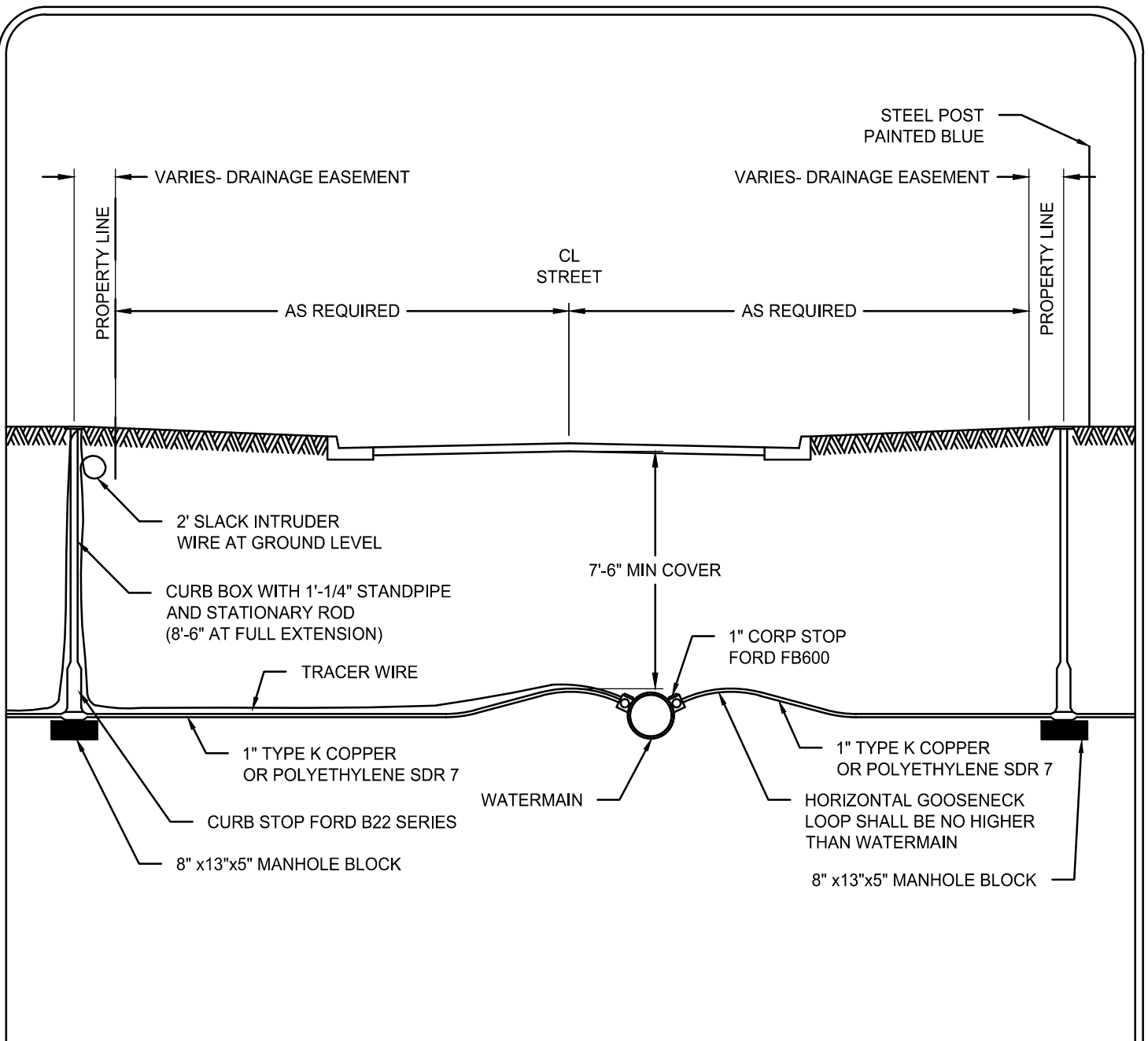
1. HYDRANT COATINGS DAMAGED DURING CONSTRUCTION SHALL BE REPAIRED AFTER THE BASE COURSE OF BITUMINOUS IS INSTALLED. PRIME AND PAINT HYDRANTS PER AWWA AND MANUFACTURER'S STANDARDS.
2. ALL HYDRANT LEADS SHALL BE TIED WITH 3/4" TIE RODS. TIE ROD SHALL EXTEND FROM TEE TO VALVE AND VALVE TO HYDRANT. MEGA LUGS MAY BE USED IN LIEU OF TIED RODS.
3. HYDRANTS SHALL HAVE A 16" BREAK OFF TRAFFIC FLANGE
4. ALL RODS AND RETAINERS TO BE COATED WITH BITUMASTIC.
5. RED OR YELLOW "OUT OF ORDER" TAG TO BE INSTALLED ON THE PUMPER CONNECTIONS AFTER BACKFILL
6. THE INITIAL & FINAL RAISING OF VALVE BOXES SHALL BE CONSIDERED INCIDENTAL TO THE PROJECT.
7. ALL WATERMAIN BOLTS SHALL BE STAINLESS OR COR-BLUE OR APPROVED EQUAL.



TYPICAL HYDRANT INSTALLATION

Special Details

Date:	04-01-15	HU-W-1
Revised:	03-12-20	



NOTES:

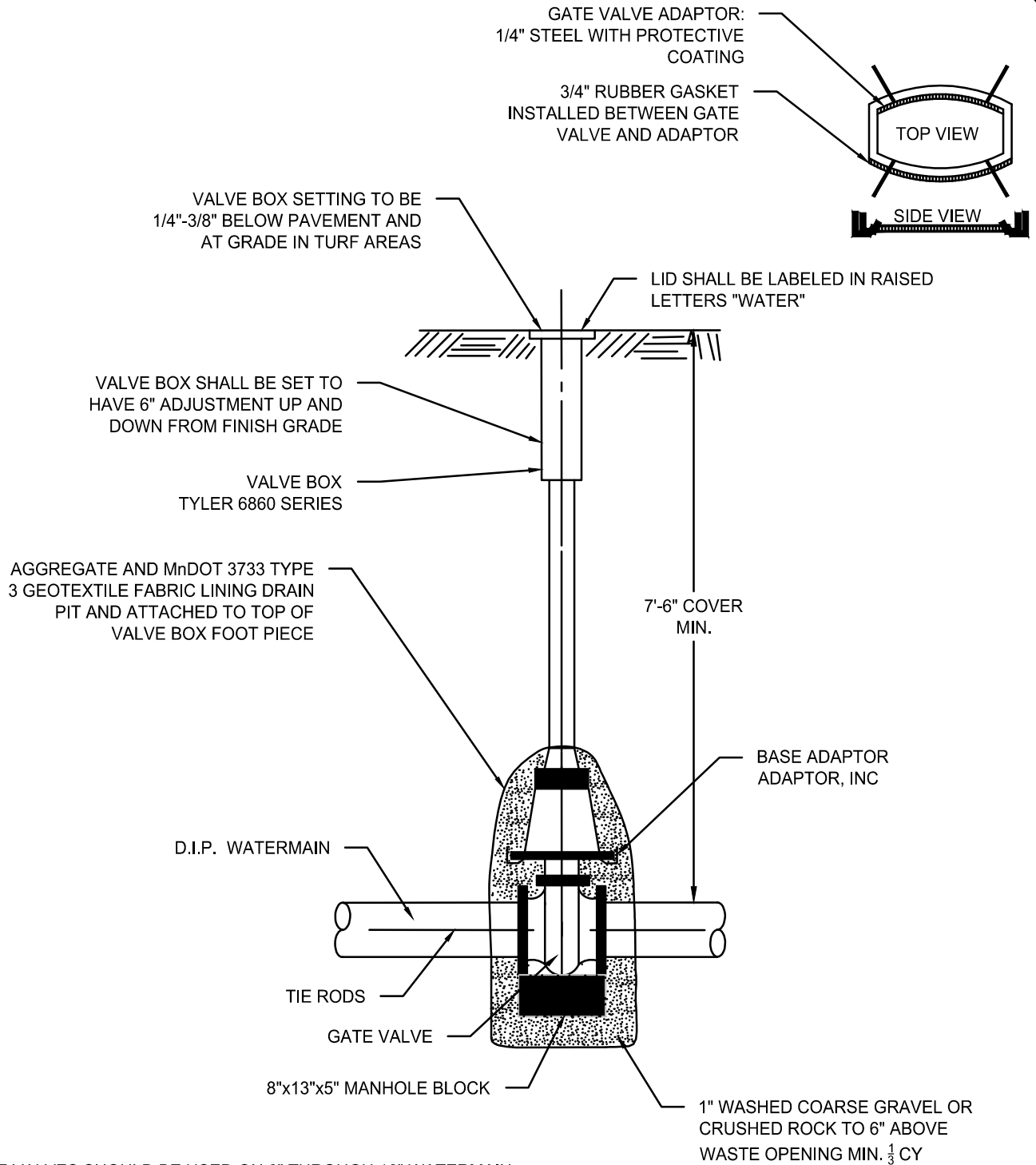
1. CURB BOXES INSTALLED IN AREAS WHERE BOULEVARD IS TO BE CUT AT A LATER DATE SHALL BE INSTALLED AT DEPTH REQUIRED, CURB BOX EXTENSION FOR BOXES EXCEEDING 7.5' IN LENGTH ARE TO BE BID AT CONTRACT PRICE AND SHALL INCLUDE STACK COUPLINGS, CONNECTIONS, ETC..
2. CURB BOXES LOCATED IN DRIVEWAYS OR PARKING LOTS SHALL UTILIZE THE FORD MINNEAPOLIS PATTERN CURB BOXES A-1 OR CITY APPROVED EQUIVALENT.
3. CORP. STOPS SHALL BE FORD BALLCORP FB600-4 AND CURB STOPS SHALL BE FORD BALL VALVE B22-444M OR CITY APPROVED EQUIVALENT.
4. WHERE SIDEWALK OR TRAILS ARE PLACED 1' FROM RIGHT OF WAY WATER SERVICES SHALL BE EXTENDED 10' BEYOND THE RIGHT OF WAY.
5. WHEN THERMOPLASTIC SERVICE IS INSTALLED, CURB BOX LID AND CORPORATION STOP SHALL HAVE OPTIONAL TRACER WIRE CONNECTION.
6. SADDLES REQUIRED ON 6" DIP OR SMALLER MAINS. MUELLER H-1052B OR APPROVED EQUAL .



TYPICAL WATER SERVICES FOR WATERMAIN

Special Details

Date:	04-01-15	HU-W-2
Revised:	03-12-20	



NOTES:

1. GATE VALVES SHOULD BE USED ON 6" THROUGH 16" WATERMAIN.
2. VALVE BOX INSERTS ARE NOT ALLOWED UNLESS APPROVED BY THE ENGINEER.
3. VALVE BOXES SHALL BE INSTALLED PLUMB AND SHALL ALLOW A 4" P.V.C. PIPE TO PASS ENTIRELY OVER THE GATE VALVE NUT AFTER INSTALLATION IS COMPLETE.
4. ALL VALVES SHALL BE TIED WITH 3/4" THREADED TIE RODS TO THE MAIN. MEGA LUGS MAY BE USED IN LIEU OF TIE RODS.
5. THE INITIAL & FINAL RAISING OF VALVE BOXES SHALL BE CONSIDERED INCIDENTAL TO THE PROJECT.
6. BOXES SHALL BE WATEROUS SERIES 2500 OR APPROVED EQUAL. METAL SEATED GAVE VALVES ARE NOT ALLOWED.

NO SCALE



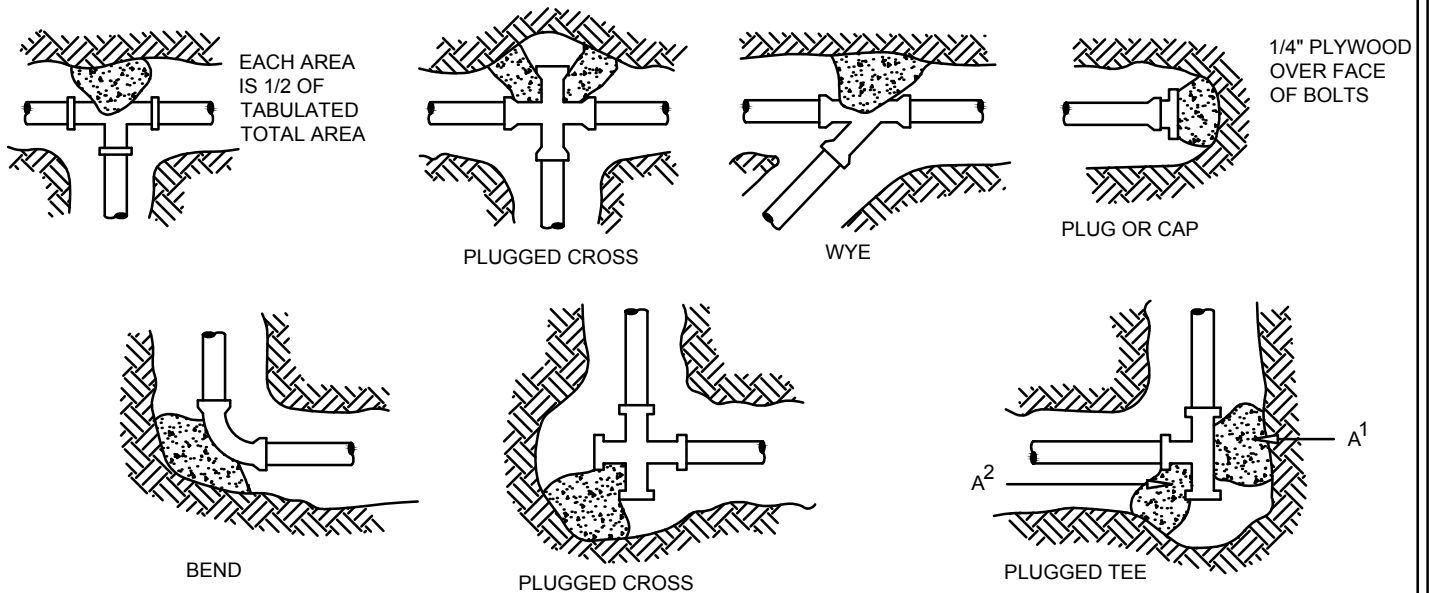
**VALVE BOX
INSTALLATION**

Special Details

Date: 04-01-15

Revised: 03-12-20

HU-W-3



NOMINAL FITTING SIZE, INCHES	TEE, WYE, PLUG OR CAP	90° BEND, PLUGGED CROSS	TEE PLUGGED ON RUN		45° BEND	22-1/2° BEND	11-1/4° BEND
			A ¹	A ²			
4	1.0	1.4	1.9	1.4	1.0	-	-
6	2.1	3.0	4.3	3.0	1.6	1.0	-
8	3.8	5.3	7.6	5.4	2.9	1.5	1.0
10	5.9	8.4	11.8	8.4	4.6	2.6	1.2
12	8.5	12.0	17.0	12.0	6.6	3.4	1.7
14	11.5	16.3	23.0	16.3	8.9	4.6	2.3
16	15.0	21.3	30.0	21.3	11.6	6.0	3.0
18	19.0	27.0	38.0	27.0	14.6	7.6	3.8
20	23.5	33.3	47.0	33.3	18.1	9.4	4.7
24	34.0	48.0	68.0	48.0	26.2	13.6	6.8

NOTES:

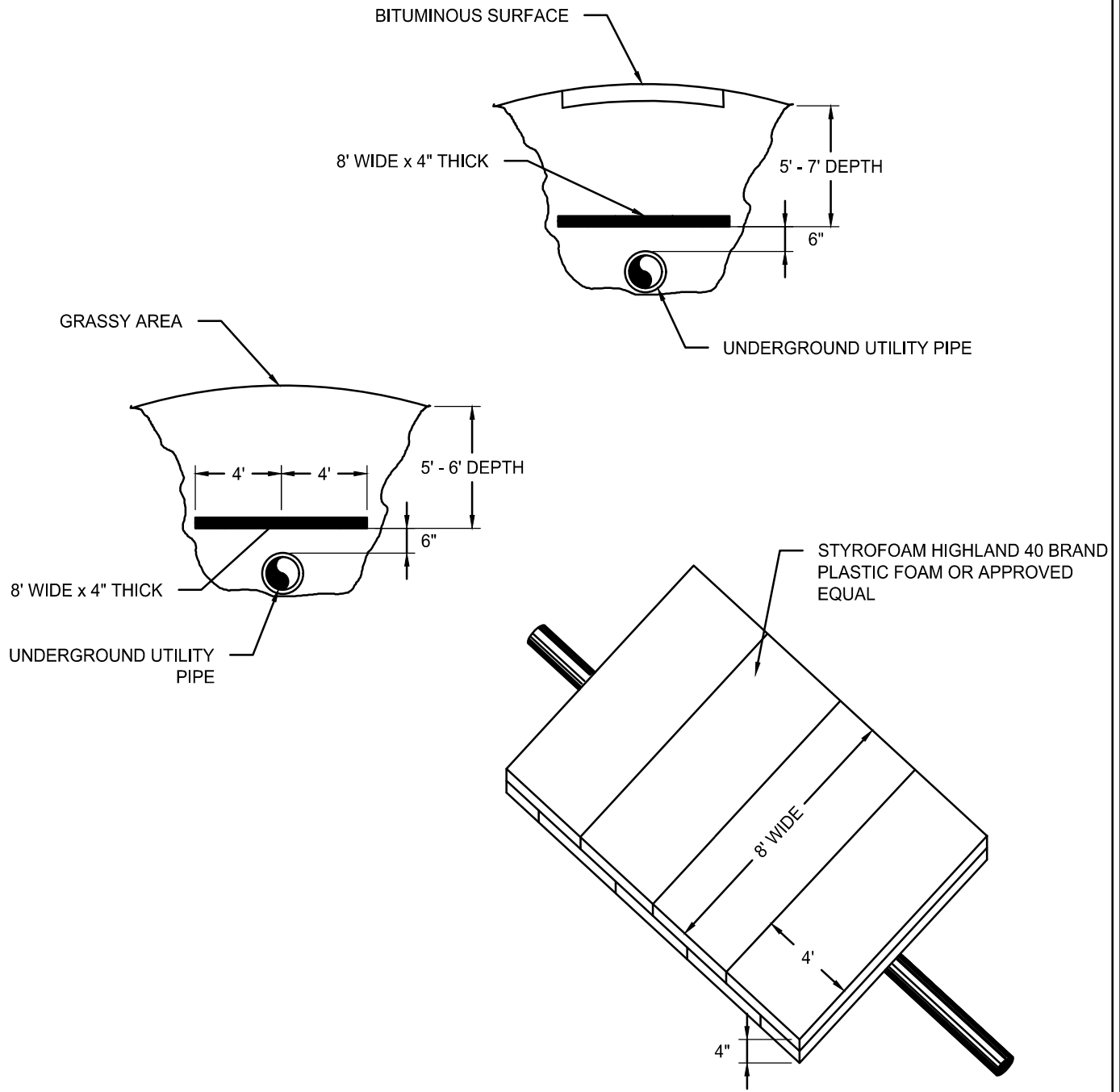
1. CONCRETE THRUST BLOCKING TO BE POURED AGAINST UNDISTURBED EARTH.
2. KEEP CONCRETE CLEAR OF JOINT AND ACCESSORIES.
3. REQUIRED BEARING AREAS AT FITTING SHALL BE AS NOTED ABOVE, UNLESS INDICATED OTHERWISE.
4. BEARING AREAS AND SPECIAL BLOCKING DETAILS SHOWN ON THE PLANS TAKE PRECEDENCE OVER BEARING AREAS AND BLOCKING DETAILS SHOWN ON THIS STANDARD PLATE.
5. ABOVE BEARING AREAS BASED ON TEST PRESSURES OF 150 PSI AND AN ALLOWABLE SOIL BEARING STRESS OF 2000 LBS. PER SQUARE FOOT. TO COMPUTE BEARING AREAS FOR DIFFERENT TEST PRESSURES AND SOIL BEARING STRESSES, USE THE FOLLOWING EQUATION: BEARING AREA = (TEST PRESSURE/150) X (2000/SOIL BEARING STRESS) X (TABLE VALUE).



POURED CONCRETE THRUST BLOCKING FOR WATERMAIN

Special Details

Date:	04-01-15	HU-W-4
Revised:	03-12-20	



NOTE:

1. UNDERGROUND UTILITY PIPE CROSSING 8'x8'x4" THICK CENTERED OVER PIPE.
2. SEPARATE LAYERS TO MAKEUP 4" THICKNESS SHALL HAVE STAGGERED JOINTS TO ENSURE CONTINUITY.



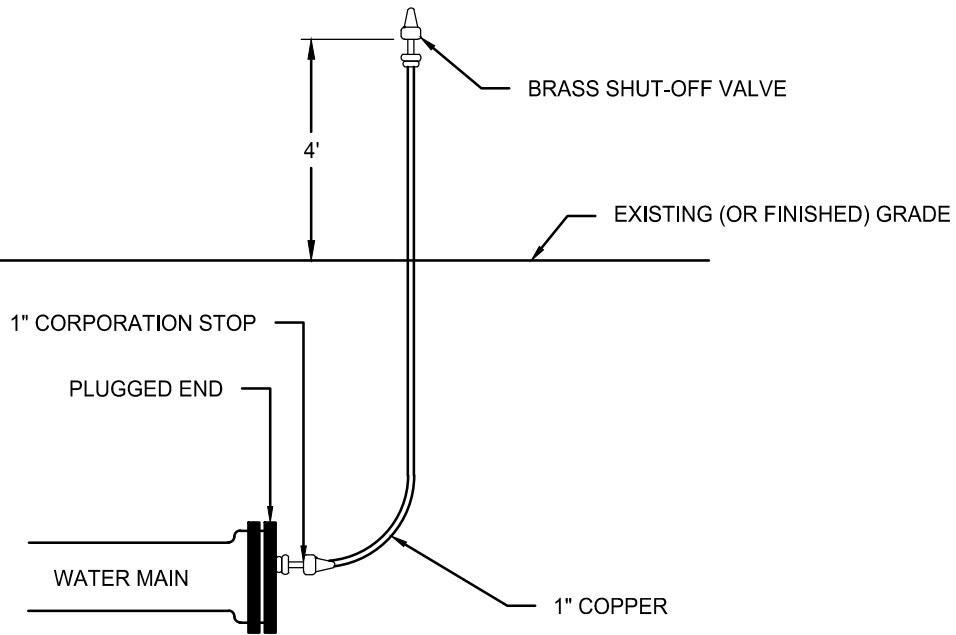
INSULATION DETAIL

Special Details

Date: 04-01-15

Revised: 03-17-2020

HU-W-5



NOTE:

1. RE-USE EX.AIR BLEED LINES AND PLUGS ON PROPOSED STUBS. INSTALLATION TO BE MADE AT NO ADDITIONAL COMPENSATION. FURNISH NEW GASKETS WHERE REQUIRED.
2. NEW LINES WILL BE PAID FOR AT UNIT PRICE BID FOR 1" COPPER AND 1" CORPORATION STOP, AS SPECIFIED. ALL OTHER WORK TO BE INCIDENTAL TO THE PROJECT.
3. TO BE REMOVED AFTER TESTING AND/OR PRIOR TO FREEZE-UP. INSTALL BLOCKING AT PLUGGED END AFTER COPPER REMOVAL.

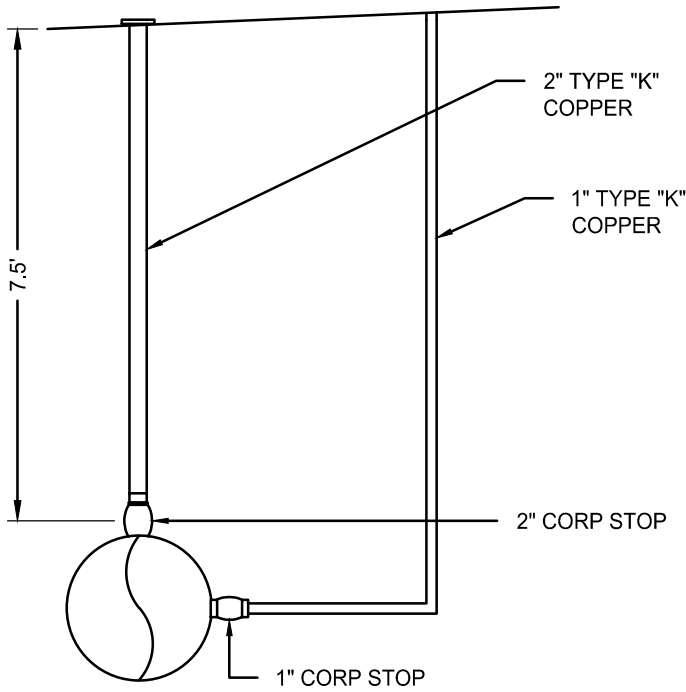


TEMPORARY AIR BLEED
INSTALLATION DETAIL

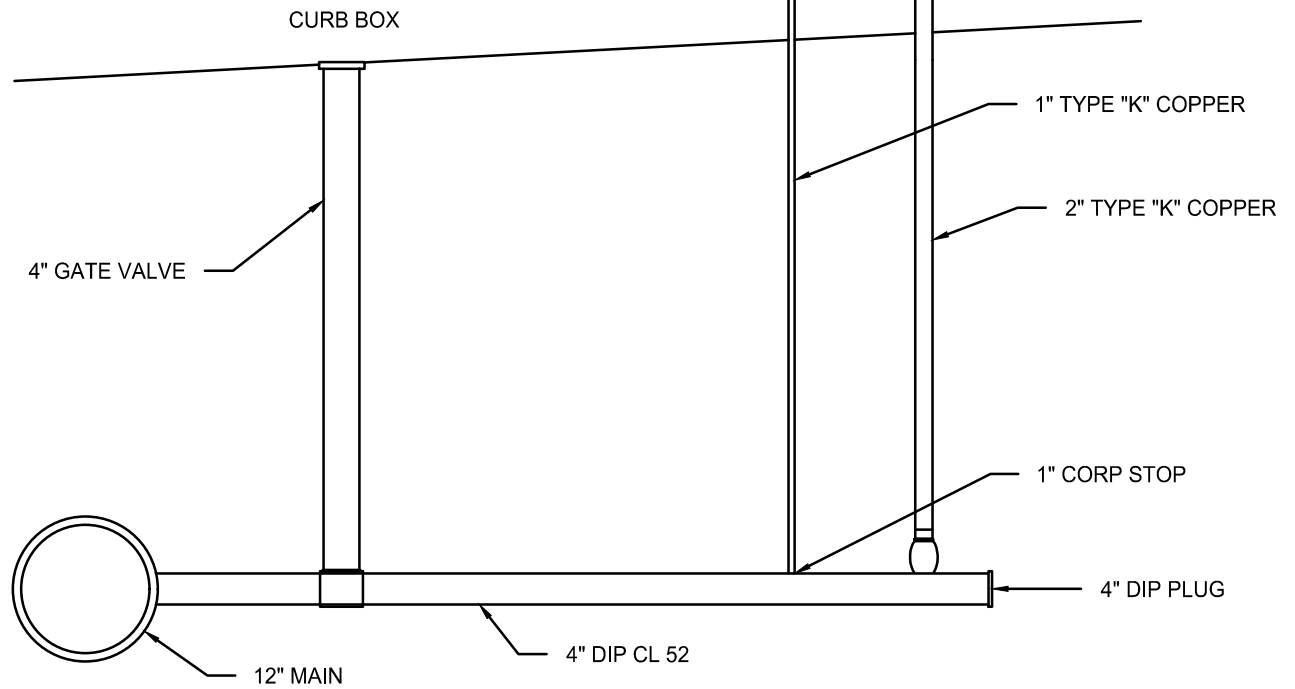
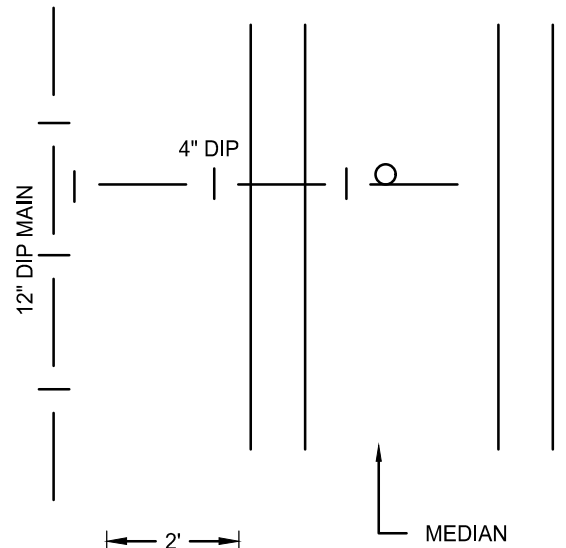
Special Details

Date:	04-01-15	HU-W-6
Revised:	03-12-20	

END VIEW



PLAN VIEW



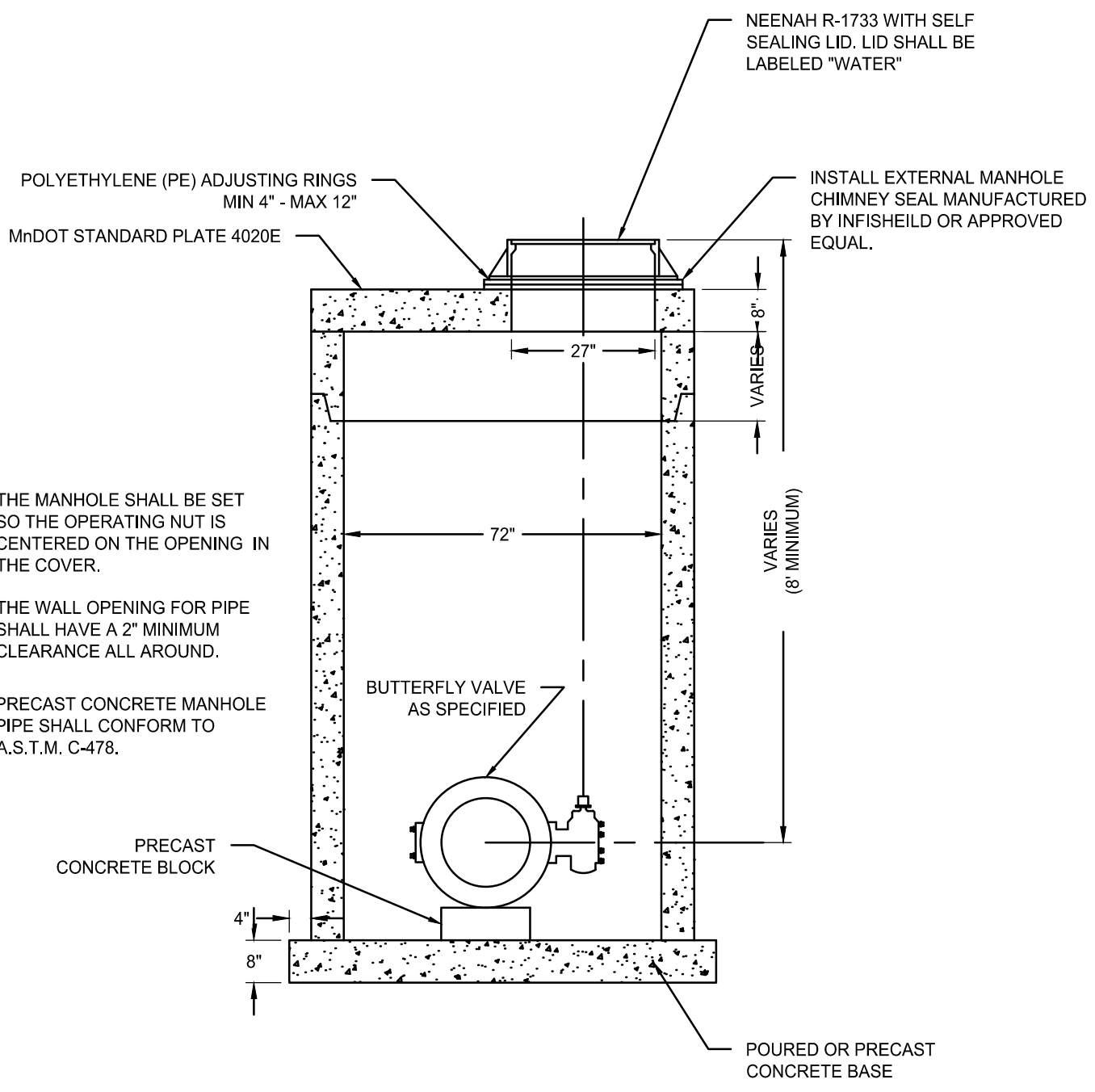
IRRIGATION DETAIL

Special Details

Date: 04-01-15

Revised: 03-12-20

HU-W-7



THE MANHOLE SHALL BE SET SO THE OPERATING NUT IS CENTERED ON THE OPENING IN THE COVER.

THE WALL OPENING FOR PIPE SHALL HAVE A 2" MINIMUM CLEARANCE ALL AROUND.

PRECAST CONCRETE MANHOLE PIPE SHALL CONFORM TO A.S.T.M. C-478.

PRECAST CONCRETE BLOCK

POURED OR PRECAST CONCRETE BASE



**WATERMAIN VALVE
MANHOLE DETAIL**

Special Details

Date:	04-01-15
Revised:	03-12-20

HU-W-8