NOTES ON THRUST BLOCKING

1.) ALL BLOCKING SHALL BE AGAINST UNDISTURBED HAND DUG SOIL AND SHALL BE CONCRETE HAVING A MINIMUM 28 DAY STRENGTH OF 2000 PER SQUARE INCH.

2.) THRUST CALCULATORS TO BE BASED ON THRUST DUE TO WATER PRESSURE AT 100% OF TEST PRESSURE.

THRUST = 2 AP SIN 1/2 Φ

A = AREA OF PIPE
P = WATER PRESSURE
Φ = DEFLECTION ANGLE.

3.) VERTICAL UPLIFT BLOCKS SHALL BE DESIGNED ON THE BASIS OF 150 LBS. PER CU. FT. FOR CONCRETE AND SOIL AT 120 LBS. PER CU. FT. OVER THE AREA OF BLOCK.

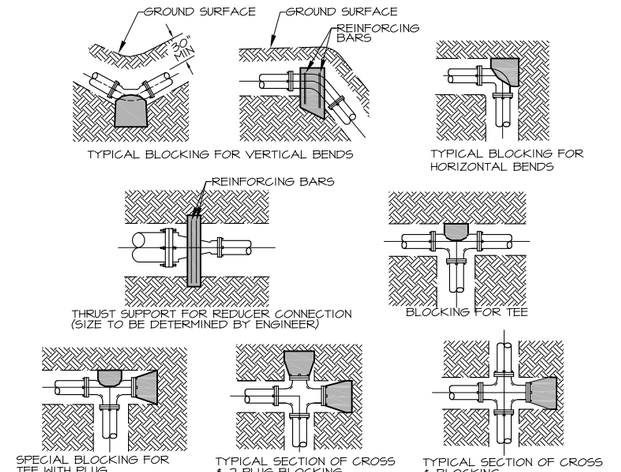
4.) VERTICAL DOWN THRUST BLOCKS SHALL BE DESIGNED ON THE BASIS OF 2000 PER SQ. FT. ALLOWABLE SOIL BEARING PRESSURE. DIMENSIONS MAY BE DECREASED WITH APPROVAL OF THE CITY IF MEASURED SOIL CONDITIONS PERMIT. IN POOR SOIL CONDITIONS, BLOCK DIMENSIONS SHALL BE INCREASED IN PROPORTION TO ALLOWABLE BEARING VALUE.

5.) THRUST BLOCKS ON HORIZONTAL BENDS, TEES, CROSSES, AND REDUCERS SHALL BE SIZED BASED ON 24000 LBS. PER SQ. FT. OF BLOCKING SURFACE AREA IN CONTACT WITH UNDISTURBED SOIL. BLOCK DIMENSIONS MAY BE DECREASED WITH APPROVAL OF THE CITY IF MEASURED SOIL CONDITIONS PERMIT. IN POOR SOIL CONDITIONS, BLOCK DIMENSIONS SHALL BE INCREASED IN PROPORTION TO THE ALLOWABLE BEARING VALUE.

6.) ALL BLOCKING SHALL HAVE A MINIMUM SOIL COVER OF 1 FT.

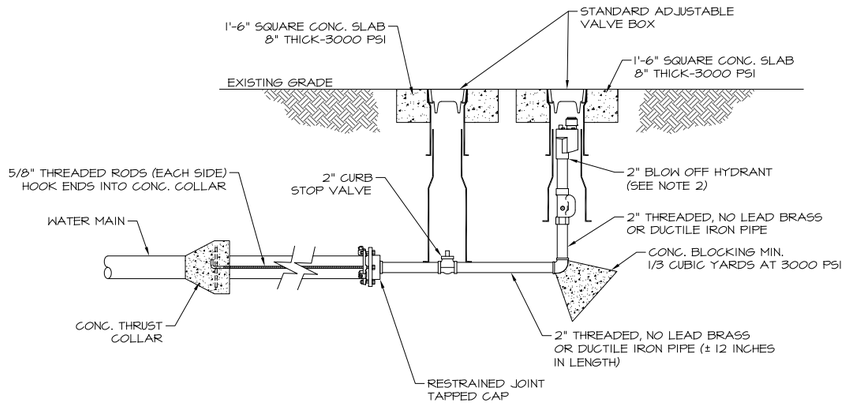
7.) ADDITIONAL REINFORCING MAY BE REQUIRED FOR HORIZONTAL BLOCKING TO HANDLE UNUSUAL SHEAR LOADING CONDITIONS.

8.) ANCHOR COLLARS SHALL BE REINFORCED IN ACCORDANCE WITH REINFORCING BAR SCHEDULE FOR REDUCED BLOCKS SHOWN ABOVE. STEEL ANCHOR RING IN ACCORDANCE WITH DIMENSIONS OF ANCHOR COLLAR.



THRUST BLOCKING DETAILS
N.T.S.

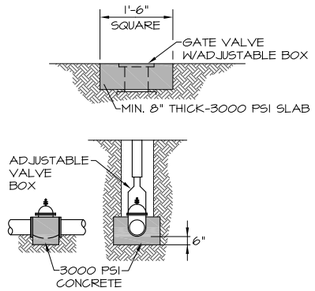
GENERAL DATA FOR BLOCKING STANDARD FITTING						
THRUST IN TONS EXERTED AT PLUGS, TEES AND BENDS FOR EACH 100 PSI OF TEST PRESSURE						
PIPE SIZE	PLUG	TEE	90° BEND	45° BEND	22.5° BEND	11.25° BEND
4" or less	0.63	0.63	0.89	0.48	0.25	0.12
6"	1.40	1.40	2.00	1.08	0.55	0.28
8"	2.50	2.50	3.55	1.92	0.98	0.49
10"	3.93	3.93	5.55	3.00	1.53	0.77
12"	5.65	5.65	8.00	4.33	2.21	1.11
14"	7.70	7.70	10.88	5.89	3.00	1.51
16"	10.05	10.05	14.21	7.69	3.85	1.97
18"	12.70	12.70	17.99	9.74	4.96	2.49
20"	15.71	15.71	22.22	12.02	6.13	3.08
24"	22.67	22.67	32.00	17.31	8.83	4.43
27"	28.63	28.63	40.48	21.91	11.17	5.61
30"	35.35	35.35	50.00	27.06	13.79	6.93
36"	50.90	50.90	72.98	38.95	19.89	9.98
42"	69.27	69.27	97.97	53.02	27.03	13.58
48"	90.48	90.48	127.96	69.25	35.30	17.74
54"	114.51	114.51	161.94	87.64	44.68	22.45



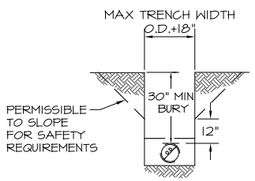
END 2" B.O. ASSEMBLY
N.T.S.

NOTES:

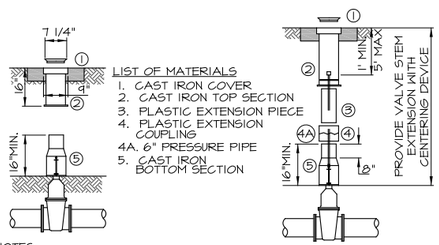
1. RODS SHALL BE "HOOKED" INTO THRUST COLLAR AND SHALL BE STAINLESS STEEL.
2. BLOW OFF HYDRANT SHALL BE TRUFLO MODEL TF550 OR APPROVED EQUAL. HYDRANT SHALL BE INSTALLED PER MANUFACTURERS SPECIFICATIONS..



VALVE BLOCKING DETAIL
N.T.S.



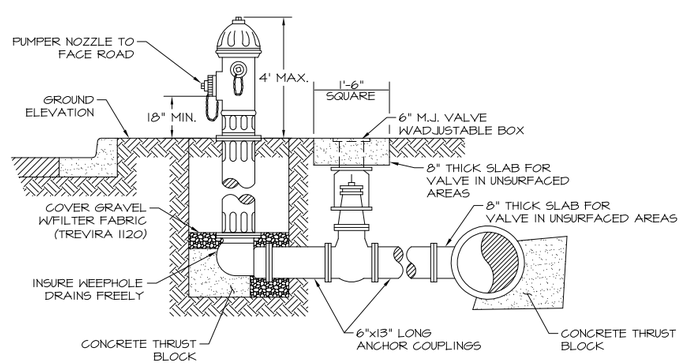
TYPICAL TRENCH SECTION
N.T.S.



NOTES:

1. IF PLASTIC EXTENSION PIECE(3) AND COUPLING(4) ARE NOT USED, PRESSURE PIPE(4A) AND ANOTHER VALVE BOX(5) MAY BE USED INSTEAD.
2. EXTENSION PIECE CAN BE CUT TO LENGTH REQUIRED.
3. PROVIDE 1'-6" X 1'-6" X 8" THICK CONCRETE AROUND TOP OF VALVE BOX.

VALVE BOX INSTALLATION
N.T.S.



TYPICAL FIRE HYDRANT ASSEMBLY INSTALLATION
N.T.S.

GENERAL NOTES CONCERNING FIRE HYDRANTS:

1.) DRAINAGE BED SHALL CONSIST OF CRUSHED STONE OR COARSE GRAVEL W/COARSE SAND, MIN. VOLUME 7 CU. FT., DRAIN BED SHALL EXTEND A MIN. OF 6" ABOVE DRAIN OUTLET.

2.) USE 6" C.I. NIPPLE W/M.J. RETAINER GLANDS IF DISTANCE BETWEEN VALVE AND FIRE HYDRANT MUST BE GREATER THAN 17".

3.) FIRE HYDRANT SHALL BE BLOCKED AGAINST UNDISTURBED SOIL AS SHOWN.

4.) ALL HYDRANTS SHALL BE INSTALLED PLUMB.

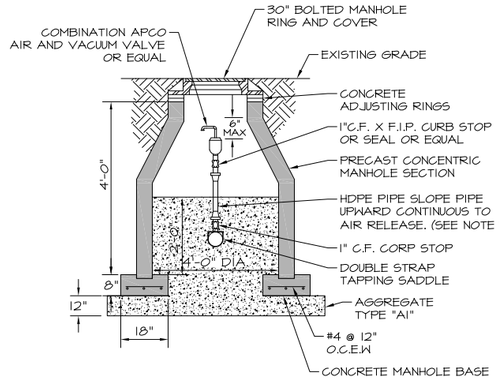
5.) HYDRANT SHOULD NOT BE SET CLOSER THAN 4' TO OBSTRUCTIONS THAT ARE IN LINE WITH NOZZLE.

6.) M.J. ANCHOR TEE FOR 16" AND SMALLER. WHEN USING REGULAR M.J. TEE USE 13" ADAPTER NIPPLE BETWEEN TEE AND VALVE.

7.) TAPPING SLEEVES SHALL BE USED ON ALL WATER MAINS.

8.) HYDRANT SHALL BE AVK SERIES 2780 OR US PIPE SENTINEL 250.

9.) FIRE HYDRANTS SHALL HAVE A 4-1/2" PUMPER OUTLET AND AT LEAST TWO 2-1/2" HOSE OUTLETS.



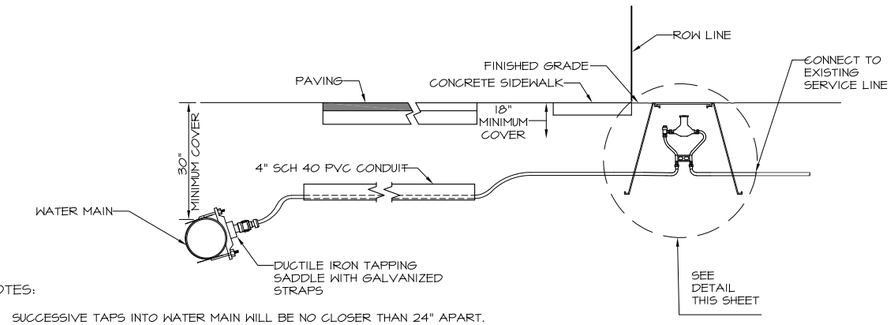
NOTES:

1. ALL THREADED CONNECTIONS SHALL HAVE A DOUBLE WRAP OF 3-MIL TEFLON TAPE ON THE THREAD.
2. VALVES WILL BE PIPED TO POINT BEYOND PAVEMENT AND SHOULDER, WHERE SHOWN ON PLANS.
3. ALL COMPONENTS SHALL BE RATED FOR WASTEWATER SUBMERGENCE.
4. LOCATE VALVE IN CENTERLINE OF MH.
5. ADJUST DEPTH OF AGGREGATE FOR VALVE STABILITY.

COMBINATION VACUUM/AIR RELEASE DETAIL
N.T.S.

W-1

DESIGN STANDARD DETAILS
CITY OF CHOCTAW OKLAHOMA
STANDARD WATER DETALS

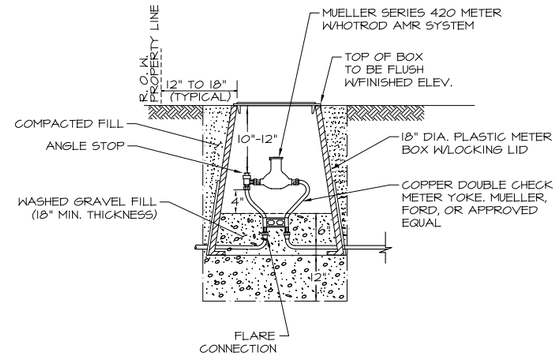


NOTES:

1. SUCCESSIVE TAPS INTO WATER MAIN WILL BE NO CLOSER THAN 24" APART.
2. ALL CASING PIPE SHALL EXTEND A MINIMUM OF 5' BEYOND THE EDGE OF PAVEMENT, WITH A CASING DIAMETER TO BE NO LESS THAN 4".
3. MATERIAL SPECIFICATIONS:
   - A. SERVICE SADDLE SHALL TO BE FORD 202BS OR APPROVED EQUAL
   - B. CORPORATION STOPS SHALL BE BALL TYPE AND MADE OF RED BRASS (FORD F-1000 OR APPROVED EQUAL). OUTLET SHALL BE COMPRESSION TYPE POLYETHYLENE TUBE. COMPRESSION INSERT SHALL BE STAINLESS STEEL.
   - C. CURB STOPS SHALL BE BALL TYPE AND MADE OF RED BRASS. INLET SHALL BE COMPRESSION JOINT. OUTLET SHALL BE SWIVEL NUT FOR METER CONNECTION.
   - D. TUBING SHALL BE POLYETHYLENE, PE3408, (AWWA C-901, SDS 9-200) AND BLUE IN COLOR; SIZES SHALL BE 1" FOR LONG AND SHORT SIDE SERVICES.
   - E. POLYETHYLENE PIPE (PE) SHALL MEET THE REQUIREMENTS OF AWWA C-901.
4. ALL COMPONENTS THAT COME INTO CONTACT WITH DRINKING WATER SHALL CONFORM TO NSF STANDARD 61.
5. ROAD BORES SHALL BE INCLUDED IN PRICE BID FOR SERVICE CONNECTIONS WHERE REQUIRED.
6. CORRDINATE SERVICE LOCATIONS WITH PROPERTY OWNER.

TYPICAL SHORT AND LONG SIDE WATER SERVICE METER SETTING DETAIL FOR CONNECTION TO WATER MAIN

N.T.S.



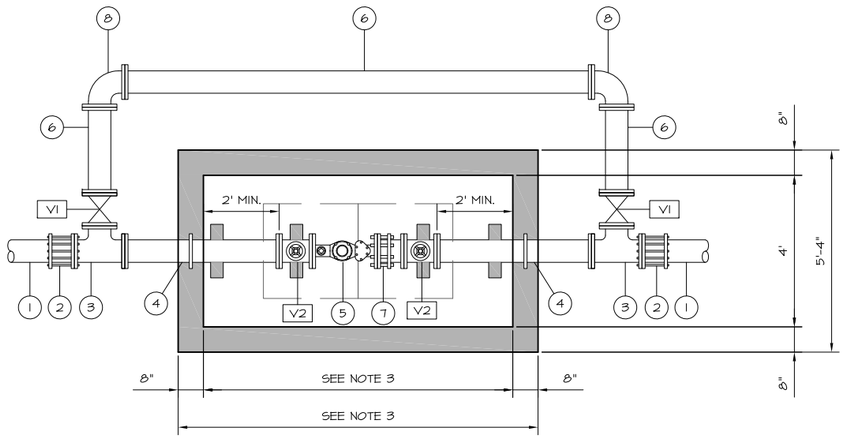
NOTES:

1. CONTRACTOR TO FURNISH AND INSTALL NEW SERVICE, NEW METER BOX, NEW METER SET, NEW METER.
2. LONG/SHORT SERVICES SHALL BE INSTALLED AS IDENTIFIED IN THE FIELD. CONTRACTOR SHALL FURNISH MATERIALS TO INSTALL PER WATER METER DETAIL.

PROPOSED WATER METER DETAIL

N.T.S.

DESIGN STANDARD DETAILS
CITY OF CHOCTAW OKLAHOMA
STANDARD WATER SERVICE
AND METER INSTALLATION



PLAN

PIPING SCHEDULE

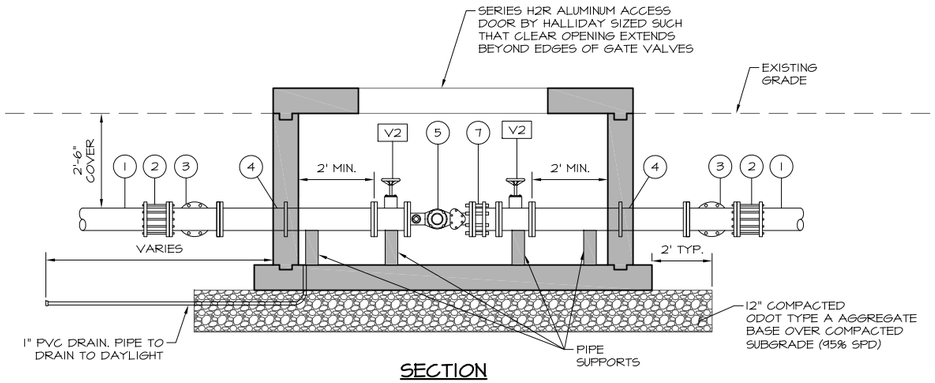
MARK	SIZE	DESCRIPTION	CONNECTION
1	MATCH EXISTING	PVC SPOOL/ECCENTRIC REDUCER (IF REQ'D)	PE x PE
2	6"	FLANGED COUPLING ADAPTER	FL x PE
3	6" x 6" x 6"	D.I. TEE	FL x FL
4	6"	D.I. WALL PIPE	FL x FL
5	TBD (SEE NOTE 4)	METER (SEE NOTES 1 & 4)	FL x FL
6	6"	D.I. SPOOL	FL x FL
7	6"	DISMANTLING JOINT	FL x FL
8	6"	D.I. 90° BEND	FL x FL

VALVE SCHEDULE

MARK	SIZE	DESCRIPTION	CONNECTION	ACTUATION
V1	6"	RESILIENT SEATED GATE VALVE	FL x FL	BURIED W/ADJ. VALVE BOX
V2	6"	GATE VALVE	FL x FL	HANDWHEEL OPERATED

NOTES:

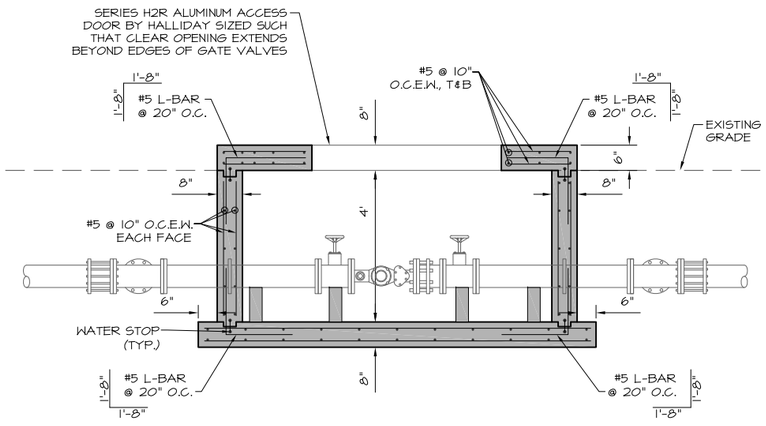
1. METER TO BE COMPOUND AND CAPABLE OF MEASURING ALL ANTICIPATED FLOWS FROM DEVELOPMENT.
2. METER VAULT MAY BE PRECAST.
3. METER VAULT SIZE TO BE ADJUSTED AS REQUIRED FOR ACTUAL METER DIMENSIONS, AS APPROVED BY CITY ENGINEER OR PUBLIC WORKS DIRECTOR.
4. EXACT SIZING OF METER TO BE BASED ON DEVELOPMENT FLOW CONDITION. ECCENTRIC REDUCER MAY BE REQUIRED.
5. WHERE FEASIBLE, CONTRACTOR TO INSTALL 1" DRAIN TO DAYLIGHT.
6. ANY REDUCERS INSTALLED SHALL BE ECCENTRIC.



SECTION

MAGNETIC METER VAULT DETAILS

N.T.S.



STRUCTURAL SECTION

N.T.S.

DESIGN STANDARD DETAILS
CITY OF CHOCTAW OKLAHOMA
COMPOUND WATER METER DETAIL