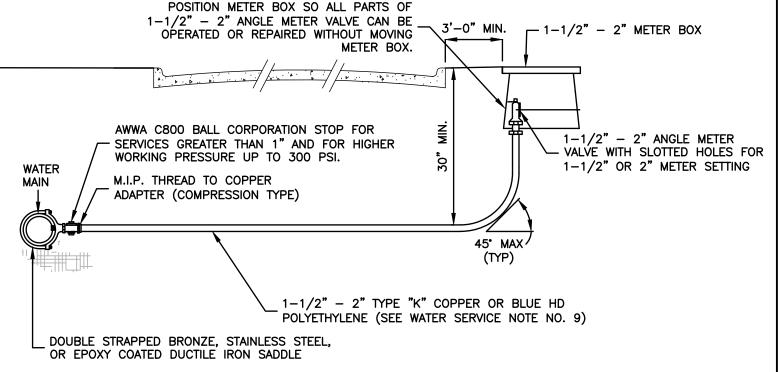


3/4" - 1" WATER SERVICE DETAIL N.T.S.



1-1/2"-2" WATER SERVICE DETAIL

WATER SERVICE NOTES:

- 1. ALL PROPERTY CORNERS SHALL BE STAKED WITH IRON RODS PRIOR TO THE INSTALLATION OF ANY WATER SERVICES. THE LOCATIONS OF THE SERVICE SHALL BE
- STAKED ACCORDING TO THE PLANS 2. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO FURNISH AND INSTALL THE CORPORATION, WATER SERVICE PIPE, CUT-OFF ANGLE VALVE, THE CONNECTOR PIPE, AND METER BOX, AS PER THE DETAILS ON THIS SHEET. 3. DIRECT TAPS ARE NOT ALLOWED, SADDLES SHALL BE
- . CUTTER FOR TAPS TO BE OF THE DOUBLE SLOTTED TYPE 5. TAPS SHALL HAVE BRASS OR STAINLESS STEEL SADDLES WITH A MINIMUM WIDTH OF 2" TO PROVIDE FULL SUPPORT
- AND SHALL BE CLOW VEGA 3407 & 3408, ROMAC 101-N & 102-N OR APPROVED EQUAL. 6. ALL SERVICE TAPS LARGER THAN 2" SHALL BE MADE USING TAPPING TEES WITH RESILIENT WEDGE GATE VALVE
- IN BOX OR APPROVED EQUAL. 7. 3/4" TO 2" TAPS SHALL BE A MINIMUM OF 1' APART WITH TAPS NO CLOSER THAN 1' FROM THE END OF THE
- 8. HOUSE SERVICES ON COMMON LOT LINES SHALL BE 1" WITH BULLHEAD. ALL OTHERS SHALL BE 3/4".
- 9. 3/4" THROUGH 2" WATER SERVICES SHALL BE: A. TYPE "K" SOFT DRAWN COPPER. B. BLUE HD POLYETHYLENE TUBING PER AWWA C901 AND

C904 PE SERVICE LINE WITH COMPRESSION COUPLING

- NUT AND INTERNAL STIFFENER DESIGNED FOR PE CONNECTION (ASTM F1948) 10. CONTRACTOR MAY USE EITHER FLARED OR COMPRESSION
- BRASS FITTINGS WITH RESTRAINED UNIONS. (USE FORD OR MUELLER "Q" COUPLING OR APPROVED EQUAL) 11. NO SPLICES OF WATER SERVICES SHALL BE PERMITTED

UNDER PAVEMENT UNLESS APPROVED BY THE CITY

12. CONTRACTOR SHALL USE A 3 PART UNION COPPER TO COPPER, MUELLER H-15405 COMPRESSION FITTING WITH RESTRAINED UNION, OR EQUAL WHERE SPLICES ARE PERMITTED. ADDITIONALLY, STIFFENERS WILL BE REQUIRED FOR HD POLYETHYLENE SERVICES.

- 13. USE 3/4" OR 1" CORPORATION, MUELLER H-15008 COMPRESSION CORPORATION, OR EQUAL.
- 14. USE 3/4" X 3/4" X 1" BULLHEAD TEE MUELLER H-15381 COMPRESSION FITTING, OR EQUAL. 15. METER BOX SHALL BE SET AT THE BACK OF CURB,
- OUTSIDE OF DRIVEWAYS AND PAVED AREAS. ALL METER BOXES SHALL BE AS SPECIFIED AS BELOW: 5/8" TO 1" METERS (NON-TRAFFIC AREAS): BASS & HAYES P34P18D1S WITH 3LIDP-2 LID 5/8" TO 1" METERS (DIRECT TRAFFIC AREAS): BASS & HAYES P34PD18SET BOX AND LID NOTE: REQUIRES PRIOR WRITTEN CITY
- APPROVAL 1-1/2" TO 2" METERS: DFW2818-IPLCIR-ITRON BOX AND LID ALL WATER SERVICES TO BE MARKED BY "W" STAMPED OR
- CUT ON THE CURB AND PAINTED BLU 18. ALL COPPER AND HDPE FITTINGS SHALL BE COMPRESSION
- 19. INSTALL 2" PIPE AND TAP FOR 1-1/2" AND 2" METER
- INSTALLATIONS 20. 1" MAX BULLHEAD SERVICE ON A 2" TAP. 21. MINIMUM 6" TAPS REQUIRED ON ALL WATER MAINS 16"
- AND LARGER. 22. METERS AND TAPS SHALL BE LOCATED ON SAME SIDE OF
- 23. CONTRACTOR SHALL REMOVE ALL SAND OVER FITTINGS & INSTALL METER BOX PROVIDED BY CITY PRIOR TO REQUESTING METER INSTALLATION. 24. USE 2" X 1-1/2" FLANGED REDUCER IF REDUCING TO
- 1-1/2" METER. 25. ALL METER BOXES SHALL BE SET LEVEL AND THE TOP OF
- THE METER BOX SHALL BE SET 2% ABOVE THE TOP OF CURB WITHIN THE PARKWAY OR AS DIRECTED BY THE CITY ENGINEER, HIS DESIGNEE OR PUBLIC WORKS DEPARTMENT REPRESENTATIVE.
- 26. FLARED CORPORATIONS FOR POLYETHYLENE SERVICE LINES SHALL BE AS FOLLOWS:
- A. 1-1/2" FLARED CORPORATIONS MUELLER H15071NJ ADAPTORS OR APPROVED EQUAL.
- B. 2" FLARED CORPORATIONS MUELLER H15071NK ADAPTORS OR APPROVED EQUAL.

- <u>GENERAL NOTES:</u> . ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS OF THE CITY OF GRAND PRAIRIE, WHICH HAS ALSO ADOPTED THE LATEST EDITION OF THE "STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION - NORTH CENTRAL TEXAS" HEREIN REFERRED TO AS "N.C.T.C.O.G." SPECIFICATIONS. COPIES MAY BE OBTAINED FROM THE NORTH CENTRAL TEXAS COUNCIL OF GOVERNMENTS, 616 SIX FLAGS DRIVE, SUITE 200, ARLINGTON,
 - WWW.PUBLICWORKS.DFWINFO.COM . PLEASE ALSO REFER TO N.C.T.C.O.G. ITEM 501, 502, 503, 504, 505, 506 & 509
 - WHERE SPECIFIED NAME BRANDS ARE INDICATED, PRODUCTS OF EQUAL OR BETTER MAY BE CONSIDERED FOR APPROVAL UPON SUBMITTAL OF ALL SUPPORTING DATA TO THE CITY
 - THE CONTRACTOR SHALL PROVIDE FOR TEMPORARY 3" COLD MIX ASPHALTIC CONCRETE AS PER N.C.T.C.O.G. ITEM 403.2.3 TO BE PLACED OVER ALL VEHICULAR TRAVELED AREAS UNTIL THE FINAL REPAIRS/IMPROVEMENTS ARE MADE

TEXAS 76005-5888. (817) 640-3300. THESE SPECIFICATIONS ARE ALSO AVAILABLE AT

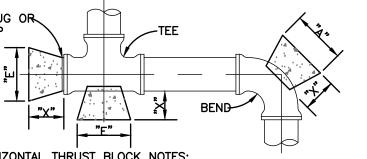
- ALL VALVES, VALVE STACKS AND COVERS ON ABANDONED WATER MAINS SHALL BE REMOVED COMPLETELY; SURFACE SHALL BE REPAIRED TO MATCH EXISTING. CONTRACTOR SHALL CONTACT TRANSPORTATION DEPARTMENT FOR THE REMOVAL OF CITY SIGNS
- IN RIGHT-OF-WAY. . WATER MAINS UP TO 12" DIAMETER SHALL BE POLYVINYL CHLORIDE PVC DR18 C900 (CLASS
- 150), OR DR14 C900 (CLASS 200). WATER MAINS GREATER THAN 12" IN DIAMETER MAY BE ONE OF THE FOLLOWING:
- . REINFORCED CONCRETE CYLINDER PIPE (RCCP) C303 PRESSURE CLASS 150 OR GREATER AS SPECIFIED BY THE ENGINEER.
- 2. PVC PIPE SHALL BE DR18 C900 (CLASS 235) OR AS APPROVED BY THE ENGINEER. PVC PIPE SHALL NOT BE USED FOR MAINS GREATER THAN 24" IN DIAMETER.
- **FMBFDMFNT:** . EMBEDMENT SHALL BE AS PER THE "PIPE EMBEDMENT DETAIL" ON THIS SHEET UNLESS
- SPECIFIED OTHERWISE BY THE ENGINEER. 2. FOR PIPE SIZES LARGER THAN 12", MINIMUM EMBEDMENT SHALL BE 1/4"-3/4" CRUSHED
- STONE 6" BELOW PIPE TO 6" ABOVE PIPE UNLESS SPECIFIED OTHERWISE BY THE ENGINEER. COVER: THE FOLLOWING MINIMUM COVERS OVER THE WATERLINE ARE REQUIRED:
- 1. 42" OF COVER OVER WATERLINES 8" IN DIAMETER OR LESS 2. 48" OF COVER OVER WATERLINES 12" IN DIAMETER,

AND SHALL BE PROTECTED FROM OTHER ELEMENTS.

- 3. 60" TO 72" OF COVER OVER WATERLINES LARGER THAN 12" IN DIAMETER. NOTE: WATER MAINS BURIED WITH OVER 72" OF COVER SHALL BE APPROVED BY THE CITY ENGINEER. STORAGE: PVC WATER PIPE IS ALLOWED TO BE STORED A MAXIMUM OF SIX (6) MONTHS WITHOUT COVER. THEREAFTER ALL PIPES SHALL BE COVERED OR KEPT AWAY FROM SUNLIGHT
- INSTALLATION . EITHER BLUE OR WHITE PVC WATER PIPE IS ACCEPTABLE FOR THE INSTALLATION. HOWEVER WHEN EITHER COLOR PVC PIPE IS USED. THE CONTRACTOR IS RESPONSIBLE TO INSTALL THE PIPE IN A WAY THAT THE WRITING ON THE PIPE IS INSTALLED ON THE SIDE UP AND IS
- READABLE FROM THE TOP OF THE DITCH.
- 2. ALL WATER MAINS, VALVES, FITTINGS, ETC. MADE WITH DUCTILE IRON OR FERROUS METAL SHALL BE WRAPPED WITH 8 MIL. POLYWRAP.
- BEVELED ENDS OF THE PIPE SHALL BE REMOVED WHEN USED IN MJ FITTING . CASINGS: WHEN PVC WATER PIPE IS INSTALLED IN CASING, SKIDS MUST BE USED TO PREVENT DAMAGE TO THE PIPE AND BELL DURING INSTALLATION. PVC PIPE SHOULD NOT REST ON THE BELLS. PLASTIC SPACERS SUCH AS RACI OR APPROVED EQUAL SHALL BE USED.
- MUST STUB OUT AT LEAST ONE FULL JOINT OF PIPE AT ALL STUB OUTS. NO SERVICES SHALL BE LOCATED ON THE STUB OUT. . PLACE PIPE WITH LETTERING FACING UP (ON TOP OF PIPE
- . MAXIMUM PIPE DEFLECTION SHALL BE AS RECOMMENDED BY MANUFACTURER DUCTILE IRON PIPE WHERE SPECIFIED BY THE ENGINEER SHALL HAVE CEMENT—MORTER LINING
- PER AWWA C104 SPECIFICATIONS AND SHALL BE OF A MINIMUM THICKNESS CLASS 51 OR GREATER AND HAVE A MINIMUM 8 MILS POLYWRAP.
- FITTINGS:
 A. THE CONTRACTOR MAY USE CAST IRON OR DUCTILE IRON FITTINGS, COMPLETE WITH EPOXY COATING AND 8 MIL. (MIN.) POLYWRAP D. ALL FITTINGS SHALL BÈ BLOCKED AS PER DETAILS ON THIS SHEET.
- . ALL FITTINGS SHALL BE MJ UNLESS SPECIFIED OTHERWISE. PVC FITTINGS ARE NOT ALLOWED D. PLEASE ALSO REFER TO N.C.T.C.O.G. ITEM 501 SPECIFICATIONS
- . ALL BENDS, TEES AND PLUGS SHALL HAVE RETAINER GLANDS. F. USE AWWA C110 DUCTILE IRON FITTINGS FOR PIPES 3"-48" IN DIAMETER AND AWWA C153 FOI
- DUCTILE IRON COMPACT FITTINGS FOR PIPES 3"-16" IN DIAMETER. G. DUCTILE IRON INTEGRAL RESTRAINED JOINT FITTINGS ARE PERMISSIBLE FOR PVC AND DUCTILE IRON PIPE SIZES 4"-12" IN DIAMETER; NOTE: CONCRETE BLOCKING IS NOT REQUIRED WITH
- THESE FITTINGS. . ALL DUCTILE IRON AND CAST IRON FITTINGS SHALL BE MANUFACTURED IN THE UNITED STATES. POLYWRAP SADDLES WITH 8 MIL POLYWRAP.
- A. VALVES INSTALLED ON WATERLINES 12" IN DIAMETER OR LESS SHALL BE VERTICAL GATE
- . VALVES INSTALLED ON WATERLINES LARGER THAN 12" IN DIAMETER SHALL BE DIRECT BURY BUTTERFLY VALVES WITH A VALVE BOX. PLEASE NOTE THAT SPECIAL FITTINGS SHALL BE
- INSTALLED TO ALLOW POLY-PIGGING OF NEW INSTALLATIONS. COST INCIDENTAL TO PROJECT BUTTERFLY VALVES SHALL CONFORM TO AWWA C504 STANDARDS LATEST REVISION.
- BUTTERFLY VALVES SHALL BE MUELLER, CLOW, PRATT, M&H OR AN APPROVED EQUAL. ALL GATE VALVES SHALL HAVE NON-RISING STEMS AND RESILIENT SEATED WEDGE. . ALL VALVES AND FIRE HYDRANTS SHALL BE IN LINE WITH THE PROPERTY LINE, WHERE
- G. ALL VALVE LOCATIONS SHALL BE MARKED WITH "V" STAMPED OR CUT ON THE CURB.
- SPECIFICATIONS. ALL STUB-OUT VALVES TO HAVE A MINIMUM 20' JOINT OF PIPE. ALL VALVES TO BE FLANGED VALVES OR ANCHOR COUPLE TO TEE WHERE APPLICABLE.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE FOLLOWING: I. PURGING BY USING THE "POLY—PIG" METHOD TO ENTER AND EXIT AT APPROVED STRATEGIC
- LOCATIONS AND AS PER N.C.T.C.O.G. ITEM 506.7.3.1 SPECIFICATIONS. TO INCLUDE ALL EQUIPMENT, MATERIAL, FITTINGS, AND LABOR.
- . HYDROSTATIC TEST AS PER N.C.T.C.O.G. ITEM 506.5 SPECIFICATIONS. 3. STERILIZATION SHALL FOLLOW AS PER N.C.T.C.O.G. ITEM 506.7. SPECIFICATIONS AND AS APPROVED BY THE CITY ENGINEER.
- . ALL TEMPORARY TEST POINTS TO HAVE CORPORATION STOPS AT THE MAIN. 5. ALL TEMPORARY TESTING & CHLORINATION POINTS SHALL BE REMOVED AT THE CORPORATION, PRIOR TO FINAL ACCEPTANCE.
- 3. ONE WATER SAMPLE PER EACH STREET NAME, OR AS APPROVED BY THE CITY ENGINEER. (i) PLEASE REFER TO THE STANDARD GENERAL TESTING REQUIREMENTS FOR WATER, WASTEWATER, STORM DRAIN AND PAVEMENT CONSTRUCTION DETAIL SHEET.
- (ii)THE CITY WILL PROVIDE BACKFILL, DENSITY AND CONCRETE TESTING FOR ALL PROJECTS UNLESS SPECIFIED OTHERWISE. ALL REPORTS SHALL BE TURNED IN TO THE INSPECTOR WITHIN FIVE (5) WORKING DAYS.

. ALL MATERIAL INCORPORATED IN THE CONSTRUCTION SHALL BE NEW. PRIVATE DEVELOPMENT PROJECTS:

.THE DEVELOPER/OWNER SHALL PROVIDE ESCROW FUNDS FOR GEOTECHNICAL AND MATERIAL TESTING AS PER CITY ORDINANCE #7951 FOR BACKFILL, DENSITY AND CONCRETE TESTING PRIOR TO BEGINNING ANY CONSTRUCTION



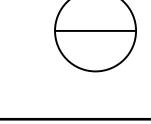
RETAINER GLANDS OR OTHER RESTRAINING DEVICES MAY BE REQUIRED AS NEEDED.

- ALL CALCULATIONS ARE BASED ON A WATER LINE PRESS OF 150 p.s.i. AND AN ALLOWABLE SOIL BEARING VALUE 2.500 POUNDS PER SQUARE FOOT
- 2000 PSI. CONCRETE SHALL BE USED FOR ALL BLOCKIN THE MINIMUM VERTICAL DIMENSIONS OF ALL BLOCKING S BE 1.5 TIMES THE PIPE DIAMETER WITH AT LEAST 0.75 THE PIPE DIAMETER EXTENDING BOTH ABOVE AND BELOW PIPE CENTERLINE. THIS DIMENSION DETERMINES THE "X" DIMENSION FOR 11 1/4° BENDS.
- FOR 22-1/2°, 45°, 90°, AND TEE AND PLUGS, THE VERT DIMENSION SHALL BE EQUAL TO THE HORIZONTAL DIMENS SHOWN TO PRODUCE THE REQUIRED MINIMUM AREA. ALL MINIMUM AREAS ARE IN SQUARE FEET.

			11.25°		22.5°		45°		90 .		TEE & PLUG		
`		l x l											
	PIPE SIZE	DIA.	"A"	MIN. AREA	l	MIN. AREA	"A"	MIN. AREA	"A"	MIN. AREA	"E"	MIN. AREA	
	4"	1.5	1.00	1.00	1.00		1.00	1.00	1.00	1.06	1.00	1.00	
Ξ	6"	1.5	1.00	1.00	1.00	1.00	1.14	1.30	1.55	2.40	1.30	1.70	
	8"	1.5	1.00	1.00	1.08	1.18	1.52	2.31	2.07	4.27	1.74	3.02	
	10"	1.5	1.00	1.00	1.35	1.84	1.90	3.61	2.58	6.66	2.17	4.71	
SURE OF	12"	1.5	1.00	1.33	1.63	2.65	1.86	5.19	3.10	9.60	2.61	6.79	
	14"	1.5	1.03	1.81	1.90	3.60	2.66	7.07	3.61	13.06	3.04	9.246	
ING. SHALL TIMES W THE	16"	2.0	1.18	2.36	2.17	4.71	3.04	9.23	4.13	17.06	3.47	12.06	
	18"	2.0	1.33	2.99	2.44	5.96	3.42	11.69	4.65	21.59	3.91	15.27	
	20"	2.0	1.48	3.70	2.71	7.35	3.80	14.43	5.16	26.86	4.34	18.85	
	21"	2.0	1.55	4.07	2.85	8.11	3.99	15.91	5.42	29.39	4.56	20.78	
	24"	2.0	1.77	5.32	3.25	10.59	4.56	20.77	6.20	38.39	5.21	27.14	
	27"	2.5	1.99	6.73	3.66	13.40	5.13	26.29	6.97	48.58	5.86	34.35	
RTICAL NSION	<u> 30" </u>	2.5	2.22	8.31	4.07	16.55	5.70	32.46	7.74	59.98	6.51	42.41	
	33"	2.5	2.44	10.06	4.47	20.02	6.27	39.28	8.52	72.57	7.16	51.31	
	<u> 36"</u>	2.5	2.66	<u>11.97</u>	4.88	23.83	6.84	46.74	9.29	86.37	7.81	61.07	
	39"	3.0	2.88	14.05	5.29	27.97	7.41	54.86	10.07	101.36	8.47	71.68	
	42"	3.0	3.10	16.30	5.69	32.43	7.98	63.62	10.85	117.56	9.12	83.13	
CONCR	CONCRETE FOR												

DIMENSIONS OF CONCRETE FOR HORIZONTAL THRUST BLOCKING AT FITTINGS

THIS CITY OF GRAND PRAIRIE STANDARD DETAIL SHEET IS AUTHORIZED FOR USE IN THIS PROJECT BY THE ENGINEER WHOSE SEAL APPEARS ON THIS SHEET. THIS ENGINEER IS ALSO CERTIFYING THAT THE CONTENT OF THE DETAILS AND NOTES ON THIS SHEET HAVE NOT BEEN ALTERED FROM THAT RECEIVED FROM THE CITY OF GRAND PRAIRIE



WATER STANDARD DETAILS

ENGINEERING CHECK DATE SCALE

DESIGN DRAWN FILE NO. G.F. J.P. R.A.K N.T.S. 2016

N.T.S.

TYPE II

NOTE-1