GATE VALVE & BOX W1-00

VIEW A - A

24" X 24" X 6" 28-DAY CONCRETE STRENGTH = 2000 psi WITH #4 BAR AROUND ALL VALVE BOX.

TRAFFIC RATED COPPERHEAD SNAKEPIT TEST STATION OR APPROVED EQUAL

TRAFFIC RATED COPPERHEAD SNAKEPIT TEST STATION OR APPROVED EQUAL

VALVE BOX PER SPECS WITH BOX EXTENSION AS NEEDED

2" SQUARE AWWA NUT EXTENSION WITH CENTERING COLLAR, TERMINATE 4 TO 5 FROM TOP OF BOX.

2" SQUARE AWWA NUT EXTENSION WITH CENTERING COLLAR, TERMINATE 4 TO 5 FROM TOP OF BOX.

STD. GATE VALVE W/SS BOLTS

AWWA C900 PRESSURE PIPE

14 ga. INSULATED COPPER TRACER WIRE

PVC or D.I. PIPE

BLOCK AS DIRECTED. MIN. DIMENSION APPROX. EQUAL TO ONE BAG OF SACKRETE

NOTE:
1. VALVE EXTENSION TO BE USED ONLY WHEN TOP OF GATE VALVE IS DEEPER THAN 5 FEET FROM FINISHED GRADE.
2. ALL VALVE OPERATING NUT EXTENSIONS ARE TO BE MADE OF STEEL, SIZED AS NOTED, AND PAINTED WITH TWO (2) COATS OF METAL PAINT.
3. EXTENSIONS SHALL BE A MINIMUM OF ONE (1) FOOT LONG.
4. VALVE BOX LIDS LOCATED ON VALVES TO ISOLATE FIRE SUPPRESSION LINES FROM PUBLIC WATER LINES SHALL BE EJ 8800, PRODUCT 06800044 LOCKABLE LID.

GATE VALVE EXTENSION W1-01

2" SQUARE x 2" HIGH OPERATING NUT

VALVE OPERATING NUT EXTENSION

5" DIA x 1/8" MIN THICKNESS STEEL PLATE w/ 90° CUT-OUT

1 DIA STEEL ROD

SQUARE SOCKET 2" DIA INSIDE 2 1/4" DEPTH (1/8" MIN WALL THICKNESS)

TWO 3/8" SET SCREWS ON EITHER SIDE TO LOCK THE OPERATING NUT. SCREWS ARE TO BE FLUSH WITH OUTSIDE EDGE OF BOTTOM SOCKET

STANDARD FIRE HYDRANT ASSEMBLY W1-02

GENERAL NOTES:
1. FINELY DIVIDED EARTH FREE OF ROCK, LUMPS AND CLODS EXCEEDING 6" SHALL BE PLACED BY HAND, AND COMPACTED AROUND THE CAST IRON PIPE TO A DEPTH OF 12" OVER THE TOP OF THE PIPE BEFORE BACKFILL IS BEGUN BY ANY MECHANICAL EQUIPMENT.
2. ALL CONCRETE BLOCKING SHALL BE - 28 DAY CONCRETE STRENGTH = 2000psi.
3. ALL THRUST BLOCKING SHALL PROVIDE A MINIMUM OF 2 SQUARE FEET OF BEARING AREA OF CONCRETE ON UNDISTURBED SOIL, OR AS DIRECTED BY THE ENGINEER.
4. WATER MAINS WILL NOT BE FULLY PRESSURIZED UNTIL CONCRETE HAS REACHED 7 DAY STRENGTH.
5. HEIGHT OF FIRE HYDRANT MEASURED FROM THE STEAMER NOZZLE SHALL BE 18 TO 24 INCHES ABOVE NEAREST FINAL GRADE.
6. FIRE HYDRANTS SHALL COME EQUIPPED WITH STORZ QUARTER TURN PUMPER CONNECTIONS THAT ARE AN INTEGRAL PART OF THE FIRE HYDRANT, AND MUST BE FURNISHED BY THE MANUFACTURER. STORZ ADAPTERS WILL NOT BE ACCEPTED.

1. ALL FITTING SHALL BE MECHANICL JOINTS UNLESS OTHERWISE DIRECTED.
2. HYDRANTS SHALL BE LOCATED NO CLOSER THAN 3 FEET MEASURED FROM THE BACK OF CURB TO THE FACE OF THE STEAMER ON THE FIRE HYDRANT AND NO FURTHER THAN 15 FEET FROM BACK OF CURB.
3. IF MAIN VALVE IS WITHIN 50 FEET OF FIRE HYDRANT THEN ASSEMBLY VALVE MAY BE OMITTED ON A DEAD END HYDRANT LEAD WITH NO ADDITIONAL CONNECTIONS.

STANDARD FIRE HYDRANT
GATE VALVE W/VALVE BOX
STEAMER NOZZLE CHAINS
6" STD. GATE VALVE WITH SS BOLTS
6" D.I. OR C909 PIPE
6" MJ ANCHOR COUPLING
PEA GRAVEL - FILL TO 1 FT. ABOVE WEEP HOLE
THRUST BLOCK
TEE OR TAPPING SLEEVE & VALVE AS REQUIRED
MECHANICAL JOINTS WITH SET SCREW RETAINER GLANDS OR MEGA LUGS
BLOCK USING 12"x12"x4" PRECAST CONCRETE
6" X 12" GRADELOK w/M.J. SPLIT GLANDS (ROTATE TO FINAL GRADE)

OPTIONAL

FIRE HYDRANT LOCATION REALIGN AS NEEDED

VIEW A - A
24" X 24" X 6" 28-DAY CONCRETE STRENGTH = 2000 psi WITH #4 BAR AROUND ALL VALVE BOX.

STANDARD FIRE HYDRANT
GATE VALVE W/VALVE BOX
TEE OR TAPPING SLEEVE & VALVE AS REQUIRED
ANCHOR 90° BEND
STANDARD FIRE HYDRANT

UTILITY PIPE LOCATION MATERIALS W1-03

TRAFFIC RATED COPPERHEAD SNAKEPIT TEST STATION OR APPROVED EQUAL

* REFER TO TECHNICAL SECTION 09 03 12 FOR TRACER WIRE INSTALLATION

TRAFFIC RATED COPPERHEAD SNAKEPIT TEST STATION OR APPROVED EQUAL

GROUND LEVEL
24" MAX.
48" MIN.
METAL DETECTOR TAPE
24"x24"x6" CONCRETE PAD (STD.)
METAL DETECTOR TAPE
TRACING WIRE 14ga SOLID COPPER
TRACER WIRE SHALL END AT A TEST STATION.
TYPICAL UTILITY PIPE
* TRACER WIRE MUST BE INSTALLED DIRECTLY ABOVE THE PIPE.
TYPICAL UTILITY PIPE
DEAD END

THRUST BLOCK DETAILS

THRUST BLOCK NOTES:
1. ALL CALCULATIONS ARE BASED ON INTERNAL PRESSURE OF 200 psi FOR 24" AND SMALLER INNER DIAMETER PIPE.
2. ALL BEARING SURFACES OF THRUST BLOCKS SHALL BE PLACED AGAINST UNDISTURBED EARTH OR ROCK.
3. CONCRETE FOR BLOCKING SHALL BE 2000 psi.
4. DIMENSIONS MAY BE VARIED AS REQUIRED BY FIELD WHERE AND AS DIRECTED BY THE ENGINEER. THE VOLUME OF CONCRETE BLOCKING SHALL NOT BE LESS THAN SHOWN HERE.
5. WATER MAIN SHALL NOT BE PRESSURIZED UNTIL ALL CONCRETE BLOCKING HAS REACHED 1500 psi.

TEE SCHEDULE

ID	THRUST (lbs)	C	A	VOLUME (c.y.)
4,6,8	6.5	1.5	1.5	2.5	0.3
10,12	11.3	1.5	1.5	3.5	0.6

HORIZONTAL THRUST BLOCK SCHEDULE

BEND	SIZE	A	B	C	E	G	VOLUME
90°	6,8"	5.0	1.5	1.5	0.9	2.7	0.4
	10,12"	6.5	2.5	1.5	1.2	4.0	1.0
45°	6,8"	2.0	1.5	1.5	1.2	2.2	0.2
	10,12"	3.5	2.5	1.5	1.2	2.2	0.5
22.5°	6,8"	1.5	1.5	1.5	0.9	0.8	0.1
	10,12"	1.5	1.5	1.5	1.2	1.1	0.3
11.25°	6,8"	1.5	1.5	1.5	0.9	0.4	0.1
	10,12"	1.5	1.5	1.5	1.2	0.6	0.1

NOTE: USE POLYETHYLENE WRAP OR EQUAL BETWEEN CONCRETE & PLUG TO PREVENT CONCRETE FROM STICKING TO PLUG.

TYPICAL HORIZONTAL THRUST BLOCK W2-00

SECTION X-X
PLAN VIEW
TEE THRUST BLOCK
POUR CONCRETE AGAINST UNDISTURBED EARTH
CONCRETE SHALL NOT EXTEND BEYOND JOINTS
TRENCH WIDTH
WATER PIPE
THRUST
PIPE JOINT
INNER DIA.
OUTER DIA.
POUR AGAINST UNDISTURBED EARTH

NEW WATER SERVICE W2-01
(SHORT AND LONG SIDE)

NOTES:
1. NO SPLICES IN COPPER TUBING WILL BE ALLOWED FOR SINGLE SERVICE OR BETWEEN THE SERVICE SADDLE AND THE WYE FOR DOUBLE SERVICE.
2. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO PRESSURE TEST LINE IMMEDIATELY AFTER THE STREET CROSSINGS HAVE BEEN INSTALLED.
3. MARK EACH SERVICE END WITH METAL "T" POST PAINTED BLUE.
4. MATERIAL USED SHALL BE AS SPECIFIED OR AN APPROVED EQUAL.
5. ALL CONNECTIONS TO BE COMPRESSION TYPE.
6. ALL SERVICE WYES & EXTENSIONS ARE TO BE INSTALLED WITH THE IN LINE CONSTRUCTION.
7. METERS AND VALVE BOXES SHALL BE PLACED BY THE CITY UPON PAYMENT OF FEE.
8. LOT CORNERS SHALL BE MARKED WITH A LATH UNDER THE SUPERVISION F A RPLS UPON COMPLETION OF CONSTRUCTION.

** SEE TECHNICAL SECTION 33 12 13 FOR MATERIAL REQUIREMENTS

VIEW A-A DOUBLE SERVICE

STRAIGHT BALL VALVE W/ PLUG (FOR DOUBLE SERVICE ONLY)
1-1/2" TYPE K COPPER TUBING (FOR DOUBLE SERVICE ONLY)
CONC. CURB & GUTTER
12" MIN. -16" MAX.
STRAIGHT BALL VALVE WITH PLUG (FOR DOUBLE SERVICE ONLY)
APPROVED SERVICE SADDLES FOR DUCTILE AND PVC OR TAPPED TEE
CORP STOP
WATER LINE
1" TYPE "K" COPPER TUBING (2 FOR DOUBLE SERVICE)
1-1/2" X 1" BRASS WYE (1 FOR DOUBLE SERVICE)
1" TYPE K COPPER TUBING (SINGLE SERVICE)
1-1/2" TYPE K COPPER TUBING (DOUBLE SERVICE) [SEE NOTE 1]
1-1/2" BALL VALVE (FOR DOUBLE SERVICE ONLY)

STRUCTURAL BACKFILL AREA W2-02

STRUCTURAL BACKFILL AREA INCLUDES ALL PAVED AREAS (SIDEWALKS, STREETS, ALLEYS, DRIVEWAYS,AND PARKING AREAS) AND SHALL EXTEND 5' BEYOND THE CURB LINE. STRUCTURAL BACKFILL SHALL BE CEMENT STABILIZED (SEE DETAIL W4-02 - AREAS TO BE PAVED OR EXCAVATED SOIL COMPACTED TO 95% MAXIMUM DRY DENSITY AS PER ASTM D698 WITHIN OPTIMUM TO +4% WET OF OPTIMUM (SEE DETAIL W4-02 - NON-STRUCTURAL AREAS)

LIMITS OF STRUCTURAL BACKFILL
STRUCTURAL BACKFILL AREA
R.O.W. (TYP.)/PL LINE
PAVEMENT AREAS
SIDEWALK

CASING DETAIL W2-03

NEAREST BELL JOINT (TYP. EA. END)
1" MAX CLR.
STEEL CASING
CASING SPACER
CARRIER PIPE
1-PC. PULL-ON WATER TIGHT NEOPRENE END SEAL W/ STN. STL CLAMPS "APS" OR "PSI"
ADJUSTABLE TOP RUNNERS TO MAINTAIN 1" MAX CLR.
STEEL CASING
BAND CLAMP AT SPRINGLINE
PROVIDE 4 RUNNERS AT BOTTOM
NEOPRENE INSULATION SLEEVE BETWEEN PIPE AND BAND.
POLYMER RUNNER (TYP)

CASING SPACERS 4-RUNNER MIN. (THRU 24" DIA CASING) OR 6-RUNNER MIN. (24"-42" DIA. CASING) STAINLESS STL. TYPE304, 8" WIDE BAND W/ POLYMER RUNNERS, CENTERED OR NON-CENTERED, CLEAR BELL, RESTRAINED FROM FLOTATION. INSULATED: "APS, INC., MOD SS18" OR "CASCADE"

END OF LINE BLOCKING W3-00

PLAN VIEW
SECTION A-A
MEGALUG OR SETSCREW RETAINER
UNDISTURBED DIRT
WATERLINE
END OF LINE CAP/PLUG
BEDDING SAND
MEGALUG PIPE
COMPACTED SELECT FILL
UNDISTURBED DIRT
CONCRETE

NOTE: DIMENSION FOR CONCRETE VARIES WITH WATERLINE SIZE

IN-LINE BLOW OFF ASSEMBLY W3-01

WARNING UNDERGROUND PIPELINE CONTACT THE CITY BEFORE EXCAVATING

BLACK TEXT
YELLOW BACKGROUND
VALVE NO. N
WHITE BACKGROUND

NOTES:
1. FURNISH AS SHOWN ON PLANS AND ON ALL VALVE SIGN POSTS.
2. SIGNS TO BE CONSTRUCTED FROM 20 GA. STEEL BAKED ON ENAMEL FINISH. FURNISH ONE WARNING AND ONE VALVE SIGN INSTALLED AND AT OTHER LOCATIONS AS SHOWN ON PLANS. FURNISH SAME NUMBER OF REPLACEMENT SIGNS AS FOR EACH INSTALLED (OMITTING VALVE NUMBER ON VALVE SIGN) (NOT A SEPARATE PAY ITEM)

2" BLACK PRESSURE TO BE ADDED AFTER BASIC SIGN HAS BEEN PAINTED

PIPELINE WARNING SIGN
VALVE IDENTIFICATION SIGN
8" BLUE, HEAVY DUTY, WING CHANNEL POST
2"X 4' X 6" CONCRETE SLAB
NOT GREATER THAN 45°
6" DIP W/RETAINING GLAND AT BEND AND PLUG.
AMERICAN FLOW CONTROL TRENCH ADAPTER OR AN APPROVED EQUAL
RESTRAINED JOINT W/ THRUST BLOCK
THRUST BLOCK
MAIN LINE
M.J. TEE OR CROSS
PIPELINE WARNING SIGN
3' X 3' X 6" CONCRETE SLAB
MJ PLUG
VALVE BOX AND SHAFT EXTENSION CAST IRON VALVE BOX COVER
2' X 4' X 6" CONCRETE SLAB
BACK FILL
NATURAL GROUND
6" M.J. ELL PLACED ON UNDISTURBED SOIL
INSTALL ANCHOR COUPLING AND REDUCER AS REQUIRED

SINGLE BODY COMBINATION AIR RELEASE VALVE W3-02

NOTE:
1. EMBED COPPER LINE IN TAMPED SAND FROM UNDISTURBED SOIL TO 6" ABOVE AND ON BOTH SIDES OF COPPER PIPE.
2. PAYMENT FOR BID ITEM OF "AIR RELEASE VALVE" SHALL INCLUDE ALL MATERIALS AS SHOWN IN DETAIL, INCLUDING MAIN LINE TAPPING SADDLE.
3. PIPE SIZE SHALL BE 1" OR 2".
4. SIZE OF LINES AND VALVES MAY BE MODIFIED BY THE ENGINEER

AIR RELEASE/VACUUM BREAKER VALVE VALMATIC MODEL 201C.2H (1") OR MODEL 202C.2H (2") OR EQUAL W/ SCREENED HOOD
HOT-BOX POLY ROX MODEL PHRI (1") WITH HEAT OR MODEL PHR2 (2") WITH HEAT OR APPROVED EQUAL
4" X 3' X 3' CONCRETE PAD (FOR 1" PIPE)
4" X 5' X 3' CONCRETE PAD (FOR 2" PIPE)
COPPER EXPOSED TO CONCRETE SHALL BE SLEEVED WITH APPROVED COPPER PIPE SLEEVING
TYPE "K" COPPER TUBING
TAPPING SADDLE W/ CORPORATION STOP.
IRON PIPE THREAD COMPRESSION FITTING AND BALLVALVE

2" BLOW-OFF RISER W3-03

GALV. ELL
GALV. NIPPLE
SCH. 40 GALV. PIPE
METER BOX WITH CAST IRON LID
AFTER BLOW-OFF INSTALL MALE QUICK CONNECTION & CAP
EXIST. GRADE
BRASS BALL VALVE
BRASS THREAD PIPE
BRASS ELL
MJ TAPPED CAP
WATER MAIN
BRASS NIPPLE
CONCRETE BLOCKING TO BE IN ACCORDANCE WITH DETAIL W3-00
REMOVE AND DISCARD AFTER USE

4" END OF LINE BLOW-OFF W3-04

MJ PLUG
EXIST. GRADE
4" APPROVED PIPE MATERIAL
VALVE BOX AND SHAFT EXTENSION CAST IRON VALVE BOX COVER
2' X 4' X 6" CONCRETE SLAB
AMERICAN FLOW CONTROL TRENCH ADAPTER OR AN APPROVED EQUAL
4" TAPPED CAP
WATER MAIN
4" M.J. ELL PLACED ON UNDISTURBED SOIL
CONCRETE BLOCKING TO BE IN ACCORDANCE WITH DETAIL W3-00

TYPICAL URBAN CITY STREET CROSSING W4-00

NOTE:
1. FOR MORE INFORMATION ON WATER AND SEWER LINE CROSSING SEE CITY STANDARD SPECIFICATION FOR WATER AND SEWER LINE CONSTRUCTION.
2. STEEL CASING SHALL BE AS SPECIFIED IN THE TECHNICAL SPECIFICATIONS.
3. DRY BORING PREFERRED, WET BORING ALLOWED ONLY WHEN APPROVED BY THE CITY ENGINEER.
4. PIPE CROSSING A ROADWAY SHALL BE INSTALLED ABOVE THE MAIN IT TIES INTO WITH A BEND SUCH THAT THE CARRIER PIPE CAN BE PULLED ABOVE THE PARALLEL MAIN.

GATE VALVE W/VALVE BOX
TEE OR TAPPING SLEEVE & VALVE AS REQUIRED
WATER LINE
OPEN CUT LIMIT
ENCASEMENT
WIDTH OF PAVEMENT
GATE VALVE
STEEL CASING AS REQUIRED
CARRIER PIPE
SIDEWALK MAY BE OPEN CUT OR BORED AS DIRECTED BY THE ENGINEER

TYPICAL RURAL STREET CROSSING W4-01

NOTE:
1. FOR MORE INFORMATION ON WATER AND SEWER LINE CROSSING SEE CITY STANDARD SPECIFICATION FOR WATER AND SEWER LINE CONSTRUCTION.
2. STEEL CASING SHALL BE AS SPECIFIED IN THE TECHNICAL SPECIFICATIONS.
3. DRY BORING IS REQUIRED.
4. PIPE CROSSING A ROADWAY SHALL BE INSTALLED ABOVE THE MAIN IT TIES INTO WITH A BEND SUCH THAT THE CARRIER PIPE CAN BE PULLED ABOVE THE PARALLEL MAIN.

GATE VALVE W/VALVE BOX
TEE OR TAPPING SLEEVE & VALVE AS REQUIRED
WATER LINE
ENCASEMENT
SHOULDER VARIES
WIDTH OF PAVEMENT
GATE VALVE
3'-0" BELOW DITCH FLOW LINE.
STEEL CASING
CARRIER PIPE

BEDDING AND TRENCH FOR DI PIPE & PVC PIPE W4-02

A SELECT MATERIAL
MATERIAL EXCAVATED FROM THE DITCH, (WHICH IS FREE OF ROCKS, LUMPS, CLODS, OR DEBRIS LARGER THAN TWO (2) INCHES IN THE GREATEST DIMENSION), COMPACTED TO A MINIMUM OF 90% OF MAXIMUM DENSITY AS DETERMINED BY ASTM D698 (STANDARD) AT A MOISTURE CONTENT WITHIN OPTIMUM TO +4% OF OPTIMUM UNDER NON-STRUCTURAL AREAS (ie., YARDS, PASTURES, EASEMENTS) AND TO A MINIMUM OF 98% OF MAXIMUM DENSITY AS DETERMINED BY ASTM D698 (STANDARD) AT A MOISTURE CONTENT WITHIN OPTIMUM TO +4% OF OPTIMUM UNDER NEW STREET AREAS AND STREETS TO BE RECONSTRUCTED.

B GRANULAR MATERIAL
MATERIAL SHALL BE BANK RUN RIVER SAND WHICH IS FREE OF DETRIMENTAL QUANTITIES OF CLAY, DEBRIS, OR ORGANIC MATERIAL AND WHICH, WHEN TESTED BY STANDARD LABORATORY METHODS, MEET THE FOLLOWING REQUIREMENTS:

MAXIMUM LIQUID LIMIT	45
MAXIMUM PLASTICITY INDEX	15
MAXIMUM PERCENT PASSING NO. 200 SIEVE	35
MINIMUM PERCENT PASSING 3/4" SIEVE	100

THE MATERIAL SHALL BE FREE FLOWING AND WHEN WET, SHALL NOT ADHERE TO OR FORM A BALL WHEN PRESSED IN HAND.

C CEMENT STABILIZED SAND
1-1/2" SACKS CEMENT/CY MINIMUM.
2 SACKS CEMENT/CY MINIMUM WHEN DISTANCE BETWEEN WATER LINES AND SANITARY LINES IS < 9FT

NON-STRUCTURAL AREAS
AREAS TO BE PAVED OR STREETS TO BE RECONSTRUCTED
ORIGINAL GROUND OR BOTTOM OF SUB-GRADE
SELECT MATERIAL
CEMENT STABILIZED SAND
(MANUALLY CONSOLIDATE AT OPTIMUM MOISTURE)
(MANUALLY CONSOLIDATE AT OPTIMUM MOISTURE)
PLACE METAL DETECTOR TAPE AT A MINIMUM OF 24" ABOVE TOP OF PIPE
UNDISTURBED SOIL
8"- 12" MAX.
PIPE O.D.
6" MIN./12" MAX.

NOTES:
1. FOR BEDDING AND TRENCHING WITHIN ALL EXISTING PAVED AREAS, SEE DETAILS FOR OPEN CUT STREETS (Details ST4-00, ST4-01, ST4-02). THIS NOTE DOES NOT APPLY TO STREETS BEING RECONSTRUCTED.
2. EVERY 100 FEET PROVIDE A WATER STOP BLOCK COMPOSED OF CEMENT SAND OR NATIVE MATERIAL DEPENDING ON EMBEDMENT. BLOCK SHALL BE 4 FEET IN LENGTH. NO BEDDING SAND IN THIS AREA.
3. ALL BEDDING & INSTALLATION OF DUCTILE IRON PIPE SHALL BE IN ACCORDANCE WITH ANSI/AWWA STANDARDS FOR PVC PIPE.
4. ALL BEDDING & INSTALLATION OF DUCTILE IRON PIPE SHALL BE IN ACCORDANCE WITH ANSI/AWWA C150/A21.50
5. COMPACTION SHALL BE ATTAINED BY MECHANICAL TAMPING.
6. RELATIVE COMPACTION SHALL BE TESTED IN THE PRESENCE OF THE CITY ENGINEER.
7. DUST RESULTING FROM THE CONTRACTOR'S PERFORMANCE OF THE WORK, EITHER INSIDE OR OUTSIDE THE RIGHT-OF-WAY, SHALL BE CONTROLLED BY THE CONTRACTOR.
8. ALL TRENCHES SHALL BE BACK FILLED AND TEMPORARY PAVING OR PLATING PLACED AT THE END OF EACH WORKING DAY.

GENERAL NOTES:

ALL AREAS WHERE EXISTING VEGETATION AND GRASS COVER HAVE BEEN BARED BY CONSTRUCTION SHALL BE ADEQUATELY BLOCK SODDED OR HYDROMULCHED AND WATERED UNTIL GROWTH IS ESTABLISHED. IN DEVELOPED AREAS WHERE GRASS IS PRESENT, BLOCK SOD WILL BE REQUIRED. BARED AREAS SHALL BE SEEDED OR SODDED WITHIN 14 CALENDAR DAYS OF LAST DISTURBANCE.

APPROVED EROSION CONTROL MEASURES MUST BE INSTALLED DURING THE ENTIRE TIME THAT EARTH HAS BEEN BARED BY CONSTRUCTION AND SHALL STAY IN PLACE UNTIL ACCEPTABLE VEGETATIVE GROWTH IS ESTABLISHED AFTER CONSTRUCTION IS COMPLETE AND THEN REMOVED BY CONTRACTOR.

ALL EROSION CONTROL MEASURES SHOULD BE CLEANED OF SILT AFTER EVERY RAIN.

ESTABLISHMENT OF VEGETATION MAY BE A WARRANTY ITEM.

REVISIONS:

BRYAN - COLLEGE STATION
STANDARD WATER DETAILS

W5-00 — METER VAULT ASSEMBLY

SPECIAL CONDITIONS
1. METER REGISTER SHALL BE NO DEEPER THAN 12 INCHES BELOW FINISHED GRADE.
2. FLOOR OF VAULT WILL BE A MINIMUM OF 6 INCHES FROM BOTTOM OF ANY PIPING APPARATUS OR METER WITHIN THE VAULT.
3. REINFORCED CONCRETE VAULT BASE (FLOOR) SHALL BE CONSTRUCTED USING A STANDARD FIVE SACK CONCRETE MIX AND REINFORCING COMPRISED OF #3 REBAR ON 12 INCH CENTERS WITH A MINIMUM BASE THICKNESS OF 6 INCHES.
4. SET SCREW RETAINER GLANDS SHALL BE INSTALLED AT EACH FITTING ON MECHANICAL JOINT PIPE.
5. VALVES SHALL MEET THE CITY SPECIFICATIONS FOR VALVES.
6. THERE SHALL BE NO PIPING UNDER THE FLOOR OF THE VAULT.

MODEL	SIZE	L1	W1	H1	WEIGHT lbs
DMC-CS3	3"	8'-8"	5'-0"	4'-6"	12,000
DMC-CS4	4"	8'-8"	5'-0"	4'-6"	12,000
DMC-CS6	6"	11'-0"	6'-0"	4'-9"	12,000

FLG. COUPLING ADAPTER w/FLG. SPOOL
NRS GATE VALVE (TYP-2)
NRS FLG GATE VALVE (TYP-2)
MFG. PARK EQUIP. CO. MODEL: DMC-CS
18"
ROD (TYP)
SENSUS C2 OMNI TOUCH READ 1000 GALLON w/STRAINER
FLG TEE (TYP-2)

PLAN VIEW

CONCRETE LID W/ 36"x60" SINGLE LEAF GALVANIZED STEEL HATCHWAY (H-20 RATED)
DUCTILE IRON (TYP)
GALVANIZED STEEL PIPE SUPPORT (TYP)
GRAVEL BED
12" SQ SUMP W/ CAST IRON GRATE AND OPTIONAL DRAIN

ELEVATION VIEW

APPROVED 3" OR LARGER COMPOUND METERS, VAULTS & MATERIALS

APPROVED METERS - SENSUS SRH (U. S. GALLONS)

APPROVED VAULTS - PARK DMC-BR PRE-CAST CONCRETE VAULT. W/ ADEQUATE ACCESS AND VAULT DIMENSIONS FOR METER SELECTED

APPROVED MATERIALS - DUCTILE IRON PIPE WITH MECHANICAL JOINT. SET SCREW RETAINER GLANDS WILL BE BASED ON ALL M.J. FITTINGS.

ANY DEVIATIONS FROM THE ABOVE SPECIAL CONDITIONS OR APPROVED METERS, VAULTS OR MATERIALS MUST BE SUBMITTED TO THE DIVISION MANAGER, WATER SERVICES, 72 HOURS PRIOR TO ANTICIPATED DEVIATION.

CITY OF COLLEGE STATION — METER VAULT ASSEMBLY W.5-00

W5-01 — QUAD SERVICE CONNECTION

SPECIAL CONDITIONS

ALL CONNECTIONS SHALL BE PACK-JOINT COMPRESSION TYPE

ALL SERVICE EXTENSIONS/APPURTENANCES ARE TO BE INSTALLED WITH THE MAIN LINE CONSTRUCTION

A MAXIMUM OF FOUR – 0.75" WATER METERS ARE ALLOWED FOR THIS CONFIGURATION

MATERIAL USED SHALL BE AS SPECIFIED OR AN APPROVED EQUAL

VIEW A-A QUAD SERVICE

① Service tubing: Type K copper - soft - 2"
② Ford Ball Valve - B44-777-NL- 2"
③ Ford "Y" Branch - Y44-274-NL- 2" x 1" x 1"
④ Ford Ball Valve - B44-444-NL- 1"
⑤ Ford Angle Stop KV13-332W-NL - .75" x .75" Meter Nut Swivel
⑥ Ford "U" Branch - U48-43-NL
⑦ Dual Concrete Meter Box - Provided by COCS

LOT LINE
4" MAX.
R.O-W
2" MIN

CITY OF COLLEGE STATION — QUAD SERVICE CONNECTION W.5-01

W6-00 — CITY OF BRYAN STRAIGHT OR ANGLE TAP-3/4"

NOTES:
① Service saddle, SS straps, CC threads Installed per manufacturer's recommendations. All main types: Smith Blair 317
② Corporation Stop: Ford FB 1000-4-Q - 1"
③ Service tubing: Type K copper - soft - 1"
④ Ford male adapter - C84-44-Q - 1"
⑤ Meter box valve: 5 = Ford Angle Stop - BA-11-444W - 1" 5A = Ford Straight Stop - B11-444W - 1"
⑥ Brass bushing IPS - 1" x 3/4"
⑦ Meter nipple - C38-23-2-5 - 3/4"
⑧ Meter box and lid: - B09 Utility Box - N09R Concrete Lid Marked "Water" with Flex-Net Sensus Probe Hole

CUSTOMER VALVE
PREFERRED METHOD
CUSTOMER VALVE
UPON CITY ENGINEER'S APPROVAL

CITY OF BRYAN — STRAIGHT OR ANGLE TAP-3/4" W6-00

W6-01 — CITY OF BRYAN STRAIGHT OR ANGLE TAP - 1"

NOTES:
① Service saddle, SS straps, CC threads Installed per manufacturer's recommendations. All main types: Smith Blair 317
② Corporation Stop: Ford FB 1000-4-Q - 1"
③ Service tubing: Type K copper - soft - 1"
④ Ford male adapter - C84-44-Q - 1"
⑤ Meter box valve: 5 = Ford Angle Stop - BA-11-444W - 1" 5A = Ford Straight Stop - B11-444W - 1"
⑥ Meter nipple - C38-44-2-625 - 1"
⑦ Meter box and lid: - B12 Utility Box - N09R Concrete Lid Marked "Water" with Flex-Net Sensus Probe Hole

CUSTOMER VALVE
PREFERRED METHOD
CUSTOMER VALVE
UPON CITY ENGINEER'S APPROVAL

CITY OF BRYAN — STRAIGHT OR ANGLE TAP - 1" W6-01

W6-02 — CITY OF BRYAN STRAIGHT OR ANGLE TAP-1-1/2"

CUSTOMER VALVE
PREFERRED METHOD
CUSTOMER VALVE
UPON CITY ENGINEER'S APPROVAL

CITY OF BRYAN — STRAIGHT OR ANGLE TAP-1-1/2" W6-02

W6-03 — CITY OF BRYAN STRAIGHT OR ANGLE TAP - 2"

NOTES:
① Service saddle, SS straps, CC threads Installed per manufacturer's recommendations. All main types: Smith Blair 317
② Corporation Stop: Ford FB 1000-7-Q (cc thread) - 2"
③ Service tubing: Type K copper - soft - 2"
④ Ford male adapter - C84-77-Q - 2"
⑤ Meter box valve: 5 = Ford Angle Stop - BA-11-777W - 2" 5A = Ford Straight Stop - B11-777W - 2"
⑥ Brass nipple I.P.S. - 2"x3"
⑦ Meter Flange - CF31 - 77 - 2"
⑧ Meter box and lid: Old Castle/Christy meter box and lid: - B65 Utility Box - N09R Concrete Lid Marked "Water" with Flex-Net Sensus Probe Hole

CUSTOMER VALVE
PREFERRED METHOD
CUSTOMER VALVE
UPON CITY ENGINEER'S APPROVAL

CITY OF BRYAN — STRAIGHT OR ANGLE TAP - 2" W6-03

W6-04 — CITY OF BRYAN WATER SERVICE RECONNECTION

METER SWIVEL NUT OR NIPPLE
ANGLE STOP
METER BOX
WATER METER
LOT LINE
1-1/2" BALL VALVE (FOR DOUBLE SERVICE ONLY)
4" MIN.
R.O-W

VIEW A-A DOUBLE SERVICE

METER NUT SIZE	FORD PART NO.
3/4" x 2.5" Long	C38-23-2-5
3/4" x 3" Long	C38-23-3
3/4" x 12" Long	C38-23-12
1" x 2.625" Long	C38-44-2-625
1" x 8.5" Long	C38-44-8-5
1-1/2" Meter Nipple	C38-66-2-875
1-1/2" Meter Bushing	BBIM-66
2" Meter Nipple	C38-77
2" Meter Bushing	BBIM-77

ANGLE STOP (SEE DETAILS W6-00 THRU W6-03)
2" MIN
WATER BOX
METER SWIVEL NUT OR NIPPLE
1-1/2" BALL VALVE (FOR DOUBLE SERVICE ONLY)
1" COPPER PIPE (2 FOR DOUBLE SERVICE)
1-1/2" X 1" BRASS WYE (1 FOR DOUBLE SERV.)

CITY OF BRYAN — WATER SERVICE RECONNECTION W6-04

W7-00 — CITY OF COLLEGE STATION STRAIGHT OR ANGLE TAP - 3/4"

NOTES:
① Service saddle and CC threads installed per manufacturer's recommendations. All main types: Ford S70/S90
② Corporation Stop: Ford FB 1000-4- 1"
③ Service tubing: Type K copper - soft - 1"
④ Meter box valve: 4 = Ford Angle Stop - BA13-342W - 1" 4A = Ford Straight Stop - B11-444W - 1"
⑤ Ball valve
⑥ Meter box and lid: Old Castle meter box, CI lid with Reader #36

PREFERRED METHOD
CUSTOMER VALVE
CUSTOMER VALVE
UPON CITY ENGINEER'S APPROVAL

CITY OF COLLEGE STATION — STRAIGHT OR ANGLE TAP - 3/4" W7-00

W7-01 — CITY OF COLLEGE STATION STRAIGHT OR ANGLE TAP - 1"

NOTES:
① Service saddle and CC threads installed per manufacturer's recommendations. All main types: Ford S70/S90
② Corporation Stop: Ford FB 1000-4- 1"
③ Service tubing: Type K copper - soft - 1"
④ Meter box valve: 4 = Ford Angle Stop - BA-43-444W - 1" 4A = Ford Straight Stop - B11-444W - 1"
⑤ Ball valve
⑥ Meter box and lid: Old Castle meter box, CI lid with Reader #36

PREFERRED METHOD
CUSTOMER VALVE
UPON CITY ENGINEER'S APPROVAL

CITY OF COLLEGE STATION — STRAIGHT OR ANGLE TAP - 1" W7-01

W7-02 — CITY OF COLLEGE STATION STRAIGHT OR ANGLE TAP - 1-1/2"

NOTES:
① Service saddle and CC threads installed per manufacturer's recommendations. All main types: Ford S70/S90
② Corporation Stop: Ford FB 1000-6-1-1/2"
③ Service tubing: Type K copper - soft - 1-1/2"
④ Meter box valve: 4 = Ford Angle Stop - FV-43-666W - 1-1/2" 4A = Ford Straight Stop - B11-666W - 1-1/2"
⑤ Ball valve
⑥ Meter box and lid: Old Castle meter box, CI lid with Reader #65

PREFERRED METHOD
CUSTOMER VALVE
UPON CITY ENGINEER'S APPROVAL

CITY OF COLLEGE STATION — STRAIGHT OR ANGLE TAP - 1-1/2" W7-02

W7-03 — CITY OF COLLEGE STATION STRAIGHT OR ANGLE TAP - 2"

NOTES:
① Service saddle and CC threads installed per manufacturer's recommendations. All main types: Ford S70/S90
② Corporation Stop: Ford FB 1000-7 (cc thread) - 2"
③ Service tubing: Type K copper - soft - 2"
④ Meter box valve: 4 = Ford Angle Stop - FV-43-777W - 2" 4A = Ford Straight Stop - B11-777W - 2"
⑤ Ball valve
⑥ Meter box and lid: Old Castle meter box, CI lid with Reader #65

PREFERRED METHOD
CUSTOMER VALVE
CUSTOMER VALVE
UPON CITY ENGINEER'S APPROVAL

CITY OF COLLEGE STATION — STRAIGHT OR ANGLE TAP - 2" W7-03

W7-04 — CITY OF COLLEGE STATION DOUBLE WATER SERVICE RECONNECTION

NOTES:
– ALL CONNECTIONS TO BE COMPRESSION TYPE.
– MATERIAL USED SHALL BE AS SPECIFIED OR AN APPROVED EQUAL.
– ALL SERVICE WYES & EXTENSIONS ARE TO BE INSTALLED WITH THE MAIN LINE CONSTRUCTION.

① Service Tubing: Type K Copper - cu - soft - 1.50"
② Ford Ball Valve - B44-666-NL- 1.50"
③ Ford 'Y' Branch - Y44-264-NL- 1.50" x 1" x 1"
④ Service Tubing: Type K Copper - soft - 1"
⑤ Ford Ball Valve - B44-444-NL - 1"
⑥ Ford Angle Stop KV43-332W-NL - 1" x 0.75 Meter Nut Swivel
⑦ Concrete Meter Box - Provided by COCS

VIEW A-A DOUBLE SERVICE
LOT LINE
4" MAX
R.O-W
2" MIN

CITY OF COLLEGE STATION — DOUBLE WATER SERVICE RECONNECTION W7-04

CITY OF COLLEGE STATION

CITY OF BRYAN
The Good Life, Texas Style.

DRAWN BY:
DATE:
SCALE:
APPROVED:

W2