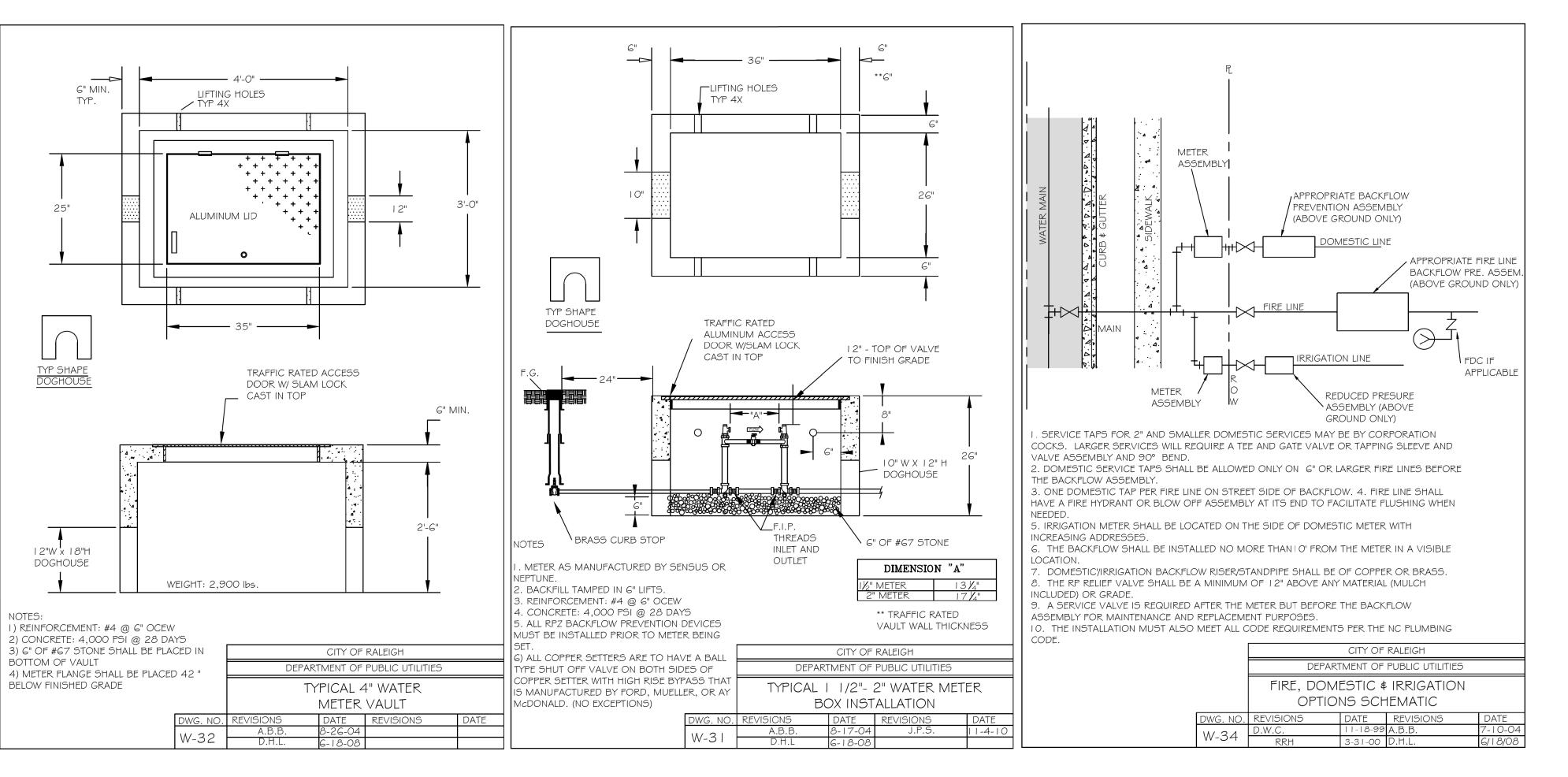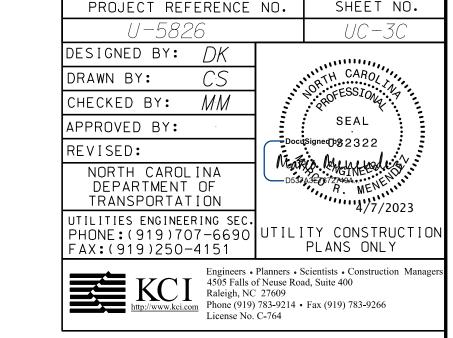# PROJECT TYPICAL DETAILS

UTILITY CONSTRUCTION
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

TYPICAL 4" WATER METER VAULT

6" MIN. TYP.
LIFTING HOLES TYP 4X
4'-0"
ALUMINUM LID
25"
12"
3'-0"
35"
TYP SHAPE DOGHOUSE
TRAFFIC RATED ACCESS DOOR W/ SLAM LOCK CAST IN TOP
6" MIN.
12"W x 18"H DOGHOUSE
2'-6"
WEIGHT: 2,900 lbs.

NOTES:
1) REINFORCEMENT: #4 @ 6" OCEW
2) CONCRETE: 4,000 PSI @ 28 DAYS
3) 6" OF #67 STONE SHALL BE PLACED IN BOTTOM OF VAULT
4) METER FLANGE SHALL BE PLACED 42" BELOW FINISHED GRADE

CITY OF RALEIGH
DEPARTMENT OF PUBLIC UTILITIES
TYPICAL 4" WATER METER VAULT

DWG. NO.	REVISIONS	DATE	REVISIONS	DATE
W-32	A.B.B.	8-26-04		
	D.H.L.	6-18-08		

TYPICAL 1 1/2"- 2" WATER METER BOX INSTALLATION

6"
36"
6"
6"
LIFTING HOLES TYP 4X
6"
10"
26"
6"
TYP SHAPE DOGHOUSE
TRAFFIC RATED ALUMINUM ACCESS DOOR W/SLAM LOCK CAST IN TOP
12" - TOP OF VALVE TO FINISH GRADE
F.G.
24"
8"
6"
10" W x 12" H DOGHOUSE
26"
BRASS CURB STOP
6" OF #67 STONE
F.I.P. THREADS INLET AND OUTLET

NOTES:
1. METER AS MANUFACTURED BY SENSUS OR NEPTUNE.
2. BACKFILL TAMPED IN 6" LIFTS.
3. REINFORCEMENT: #4 @ 6" OCEW
4. CONCRETE: 4,000 PSI @ 28 DAYS
5. ALL RPZ BACKFLOW PREVENTION DEVICES MUST BE INSTALLED PRIOR TO METER BEING SET.
6) ALL COPPER SETTERS ARE TO HAVE A BALL TYPE SHUT OFF VALVE ON BOTH SIDES OF COPPER SETTER WITH HIGH RISE BYPASS THAT IS MANUFACTURED BY FORD, MUELLER, OR AY McDONALD. (NO EXCEPTIONS)

DIMENSION "A"	
1½" METER	13¾"
2" METER	17¼"

** TRAFFIC RATED VAULT WALL THICKNESS

CITY OF RALEIGH
DEPARTMENT OF PUBLIC UTILITIES
TYPICAL 1 1/2"- 2" WATER METER BOX INSTALLATION

DWG. NO.	REVISIONS	DATE	REVISIONS	DATE
W-31	A.B.B.	8-17-04	J.P.S.	1-4-10
	D.H.L	6-18-08		

FIRE, DOMESTIC & IRRIGATION OPTIONS SCHEMATIC

WATER MAIN
CURB & GUTTER
SIDEWALK
R/W
MAIN
METER ASSEMBLY
APPROPRIATE BACKFLOW PREVENTION ASSEMBLY (ABOVE GROUND ONLY)
DOMESTIC LINE
FIRE LINE
APPROPRIATE FIRE LINE BACKFLOW PRE. ASSEM. (ABOVE GROUND ONLY)
IRRIGATION LINE
FDC IF APPLICABLE
METER ASSEMBLY
REDUCED PRESURE ASSEMBLY (ABOVE GROUND ONLY)

1. SERVICE TAPS FOR 2" AND SMALLER DOMESTIC SERVICES MAY BE BY CORPORATION COCKS. LARGER SERVICES WILL REQUIRE A TEE AND GATE VALVE OR TAPPING SLEEVE AND VALVE ASSEMBLY AND 90° BEND.
2. DOMESTIC SERVICE TAPS SHALL BE ALLOWED ONLY ON 6" OR LARGER FIRE LINES BEFORE THE BACKFLOW ASSEMBLY.
3. ONE DOMESTIC TAP PER FIRE LINE ON STREET SIDE OF BACKFLOW. 4. FIRE LINE SHALL HAVE A FIRE HYDRANT OR BLOW OFF ASSEMBLY AT ITS END TO FACILITATE FLUSHING WHEN NEEDED.
5. IRRIGATION METER SHALL BE LOCATED ON THE SIDE OF DOMESTIC METER WITH INCREASING ADDRESSES.
6. THE BACKFLOW SHALL BE INSTALLED NO MORE THAN 10' FROM THE METER IN A VISIBLE LOCATION.
7. DOMESTIC/IRRIGATION BACKFLOW RISER/STANDPIPE SHALL BE OF COPPER OR BRASS.
8. THE RP RELIEF VALVE SHALL BE A MINIMUM OF 12" ABOVE ANY MATERIAL (MULCH INCLUDED) OR GRADE.
9. A SERVICE VALVE IS REQUIRED AFTER THE METER BUT BEFORE THE BACKFLOW ASSEMBLY FOR MAINTENANCE AND REPLACEMENT PURPOSES.
10. THE INSTALLATION MUST ALSO MEET ALL CODE REQUIREMENTS PER THE NC PLUMBING CODE.

CITY OF RALEIGH
DEPARTMENT OF PUBLIC UTILITIES
FIRE, DOMESTIC & IRRIGATION OPTIONS SCHEMATIC

DWG. NO.	REVISIONS	DATE	REVISIONS	DATE
W-34	D.W.C.	11-18-99	A.B.B.	7-10-04
	RRH	3-31-00	D.H.L.	6/18/08

TYPICAL REDUCED PRESSURE ZONE BACKFLOW PREVENTER ASSEMBLY

R/W
IF THE TAP IS TO A PUBLIC MAIN, A SERVICE VALVE MUST BE PLACED BEHIND THE RIGHT OF WAY PRIOR TO THE BFP. 2 POSSIBLE LOCATIONS ARE SHOWN.
O.S.& Y. RISING STEM OR INDICATING BUTTERFLY VALVE
FDC OUTSIDE ENCLOSURE
12" MIN ALL SIDES
RPZ
12" MIN ALL SIDES
60° MAX
VALVE BOX (TYP) REFER TO W-19
RODDING (TYP)
4" THICK CONCRETE PAD
DIP
WATER VALVE
THRUST BLOCKING REFER TO W-6
WATER MAIN

1. ALL ABOVE GROUND ENCLOSURES MUST HAVE ADEQUATE DRAINAGE (TWICE THE DIAMETER OF THE SUPPLY PIPE) TO DAYLIGHT ABOVE GRADE.
2. REDUCED PRESSURE BACKFLOW PRESENTERS MAY BE LOCATED IN A BUILDING PROVIDED THERE ARE NO OTHER UNPROTECTED TAPS BETWEEN THE MAIN AND THE BUILDING. DRAINAGE IN A BUILDING MUST BE TWICE THE DIAMETER OF THE SUPPY PIPE.
3. ABOVE GROUND INSULATED VAULTS MUST BE ASSE 1060 APPROVED ABOVE GROUND ENCLOSURES. SEE CROSS CONNECTION MANUAL FOR ENCLOSURE FREEZE PROTECTION AND CERTIFICATION REQUIREMENTS.
4. RESIDENTIAL LAWN IRRIGATION R.P. ASSEMBLIES THAT ARE REMOVED TO PREVENT FREEZING IN THE WINTER MONTHS MUST BE CAPPED OFF. ALL ABOVE GROUND ASSEMBLIES, EXCEPT RESIDENTIAL LAWN IRRIGATION ASSEMBLIES, MUST BE PROTECTED FROM FROST.
5. FOR ENCLOSURE DIMENSIONS SEE DETAIL W-34.
6. STEEL RODS AND BOLTS SHALL BE 3/4" HOT DIPPED GALVANIZED.
7. ALL ASSEMBLIES MUST BE ON THE CURRENT APPROVAL LIST.

CITY OF RALEIGH
DEPARTMENT OF PUBLIC UTILITIES
TYPICAL REDUCED PRESSURE ZONE BACKFLOW PREVENTER ASSEMBLY

DWG. NO.	REVISIONS	DATE	REVISIONS	DATE
W-36	D.W.C.	11-8-99	A.B.B.	7-10-04
	Y.C.A.	12-31-91	D.H.L.	6/18/05

TYPICAL FIRE MAIN DOUBLE DETECTOR CHECK VALVE ASSEMBLY

WATER MAIN
CURB & GUTTER
WATER VALVE
12" MIN ALL SIDES
WAFER VALVE WITH BALL DRIP
FDC WITH NATIONAL STANDARD THREADS (SUBJECT TO FIRE DEPARTMENT APPROVAL)

TOP VIEW DCDA WITH FIRE HYD.

NOTE: FIRE MAINS ARE TO BE PRESSURE TESTED AT 200 PSI

IF THE TAP IS TO A PUBLIC MAIN, A SERVICE VALVE MUST BE PLACED BEHIND THE RIGHT OF WAY PRIOR TO THE BFP. 2 POSSIBLE LOCATIONS ARE SHOWN.
DRAIN TO DAYLIGHT MIN. AREA OF 2X PIPE SIZE OR 4" DIAMETER
O.S.& Y. RISING STEM OR INDICATING BUTTERFLY VALVE
FDC OUTSIDE ENCLOSURE
18" MIN ALL SIDES
DCDA (W-35)
MAINLINE GATE VALVE (SUBJECT TO INSPECTIONS DEPT. APPROVAL)
12" MIN ALL SIDES
BUILDING
60° max
5.0' MIN.
VALVE BOX (TYP) REFER TO W-19
RODDING (TYP)
THRUST BLOCKING REFER TO W-6
FLANGE (1.0' ABOVE FLOOR LEVEL)
DIP
WATER VALVE
90° BEND
WATER MAIN
FLANGE

SIDE VIEW DCDA WITH VARIABLE ENDINGS

NOTE: FIRE MAINS MAY BE TERMINATED AT:
(A) 5.0' OUTSIDE THE BUILDING WITH A MAINLINE GATE VALVE.
OR
(B) 1.0' ABOVE THE FLOOR INSIDE THE BUILDING.

CITY OF RALEIGH
DEPARTMENT OF PUBLIC UTILITIES
TYPICAL FIRE MAIN DOUBLE DETECTOR CHECK VALVE ASSEMBLY

DWG. NO.	REVISIONS	DATE	REVISIONS	DATE
W-37	Y.C.A.	G-92	A.B.B.	10-4-04
	D.W.C.	11-3-98	D.H.L.	6/18/08

CONCRETE CRADLE PROTECTION FOR WATER LINE CROSSINGS

NOTE: NO ENCASEMENT REQUIRED FOR SPACE GREATER THAN 18" FOR WATER LINES

FLOWABLE FILL FULL TRENCH WIDTH
PIPE
6"
O.D.
PROPOSED PIPELINE
6" MIN 18" MAX
EXIST PIPE
6" MIN 18" MAX
EXIST PIPE
PROPOSED PIPELINE
12" MIN
1" THICK COMPRESSIBLE JOINT FILLER MATERIAL

PROPOSED PIPELINE OVER EXISTING PIPE

PROPOSED PIPELINE UNDER EXISTING PIPE

CITY OF RALEIGH
DEPARTMENT OF PUBLIC UTILITIES
CONCRETE CRADLE PROTECTION FOR WATER LINE CROSSINGS

DWG. NO.	REVISIONS	DATE	REVISIONS	DATE
W-41	D.H.L.	2-20-08		