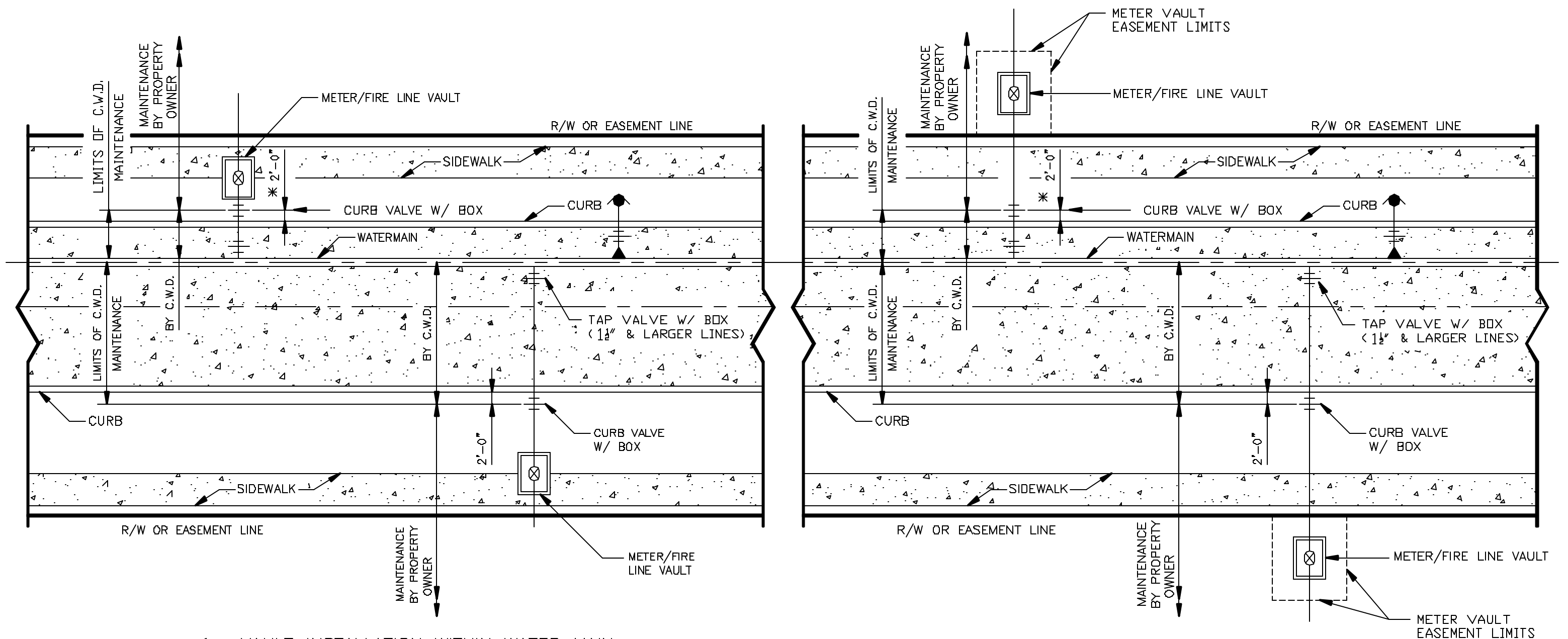


CLEVELAND DIVISION
OF WATER
CONSTRUCTION
STANDARDS

*VAULT
ARRAIGNMENT
DETAILS*



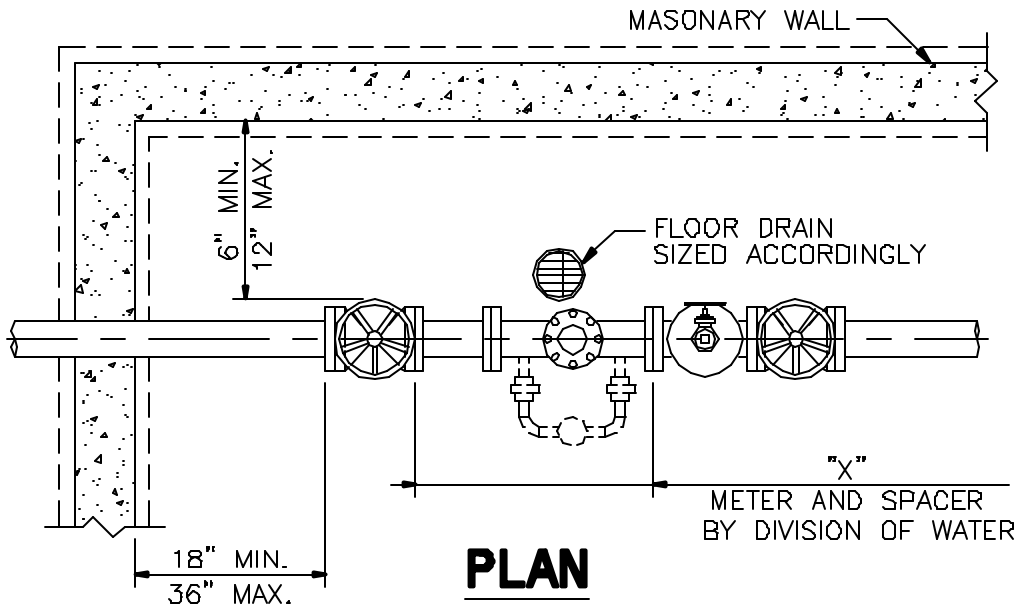
1. VAULT INSTALLATION WITHIN WATER MAIN EASEMENT OR DEDICATED R/W

2. VAULT INSTALLATION IN PRIVATE PROPERTY

VAULT AND CURB VALVE ARRANGEMENT

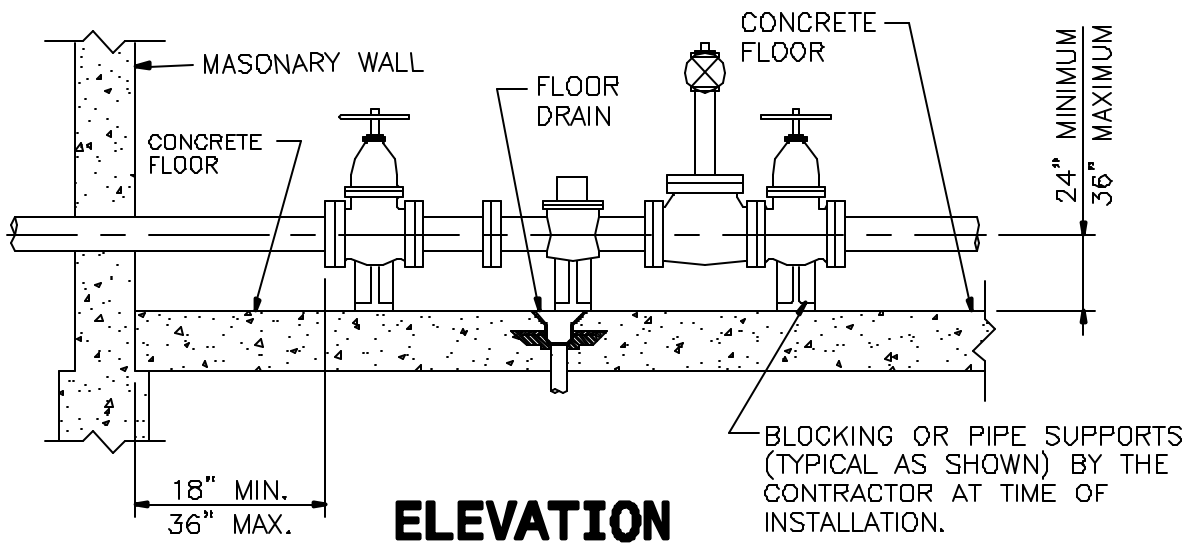
1. ALL DOMESTIC SERVICE CONNECTIONS (THAT IS ALL CONNECTIONS USED FOR DRINKING, SANITATION OR IRRIGATION PURPOSES) UTILIZING A VAULT FOR THE PLACEMENT OF THE METER SHALL MATCH ONE OF THE TWO STANDARD DRAWINGS ABOVE.
2. IF ONLY THE BACKFLOW PREVENTION DEVICE FOR THE FIRE SERVICE CONNECTION IS TO BE PLACED IN A VAULT (THAT IS THE DOMESTIC SERVICE CONNECTION WILL BE METERED INSIDE THE BUILDING WITH A REMOTE REGISTER), THEN THAT VAULT MAY BE PLACED AS SHOWN IN DRAWING No. 2 ABOVE AND A METER VAULT EASEMENT WILL NOT BE REQUIRED.
3. SINGLE FAMILY RESIDENTIAL DOMESTIC SERVICE CONNECTIONS IN EASEMENTS, WITHOUT METERS VAULTS, SHALL HAVE THE CURB VALVE PLACED NO MORE THAN FIVE (5) FEET FROM THE MAIN. THE CURB VALVE WILL STILL MARK THE CHANGE IN RESPONSIBILITY FOR MAINTENANCE.
4. VAULT AND VAULT COVERS SHALL BE PLACED OUTSIDE OF SIDEWALKS AND DRIVEWAYS WHEN POSSIBLE. VAULT COVERS IN PAVEMENT SHALL BE FLUSH TO THE SURFACE.
- * 5. IN THE CASE WHEN THE WATERMAIN IS IN THE TREE LAWN IN A DEDICATED RIGHT OF WAY, NOT UNDER THE PAVEMENT, THE SHORT SIDE SHALL HAVE THE CURB VALVE 3'-0" FROM THE WATERMAIN.

REVISIONS			STANDARD DETAILS	
No.	DATE	BY		
			DEPARTMENT OF PUBLIC UTILITIES	
			DIVISION OF WATER	
			CLEVELAND, OHIO	
			SUBJECT VAULT AND VALVE ARRANGEMENT	
			DRAWN BY RSK	
			DATE 10-1-97	
			CHECKED BY MJS DATE 10-1-97	
			-SCALE- NONE	STD-V01



SIZE	DIM. "X"
3"	2'-0" WITH 2" DISPLACEMENT METER
3"	2'-0" WITH TURBINE METER AND COMPOUND METER
4"	2'-5" WITH TURBINE METER AND COMPOUND METER
6"	3'-1" WITH COMPOUND METER AND TURBINE METER
8"	3'-6" WITH COMPOUND METER AND TURBINE METER
12"	3'-6" WITH TURBINE METER

NOTE: FOR MATERIAL REQUIRED CONSULT ASSOCIATED MATERIAL LIST FOR STANDARD METER SETTINGS FOR VAULTS AND DELETE MATERIAL FOR THE BYPASS, I.E. (1) O.S.&Y. VALVE, (2) ELBOWS, (2) TEES, GALVANIZED PIPE, GASKETS AND BOLTS.



STANDARD DETAILS

DEPARTMENT OF PUBLIC UTILITIES
DIVISION OF WATER
CLEVELAND, OHIO

SUBJECT TYPICAL METER SETTINGS

3" METER SETTING AND LARGER

FOR INSIDE BUILDINGS

DRAWN BY RSK

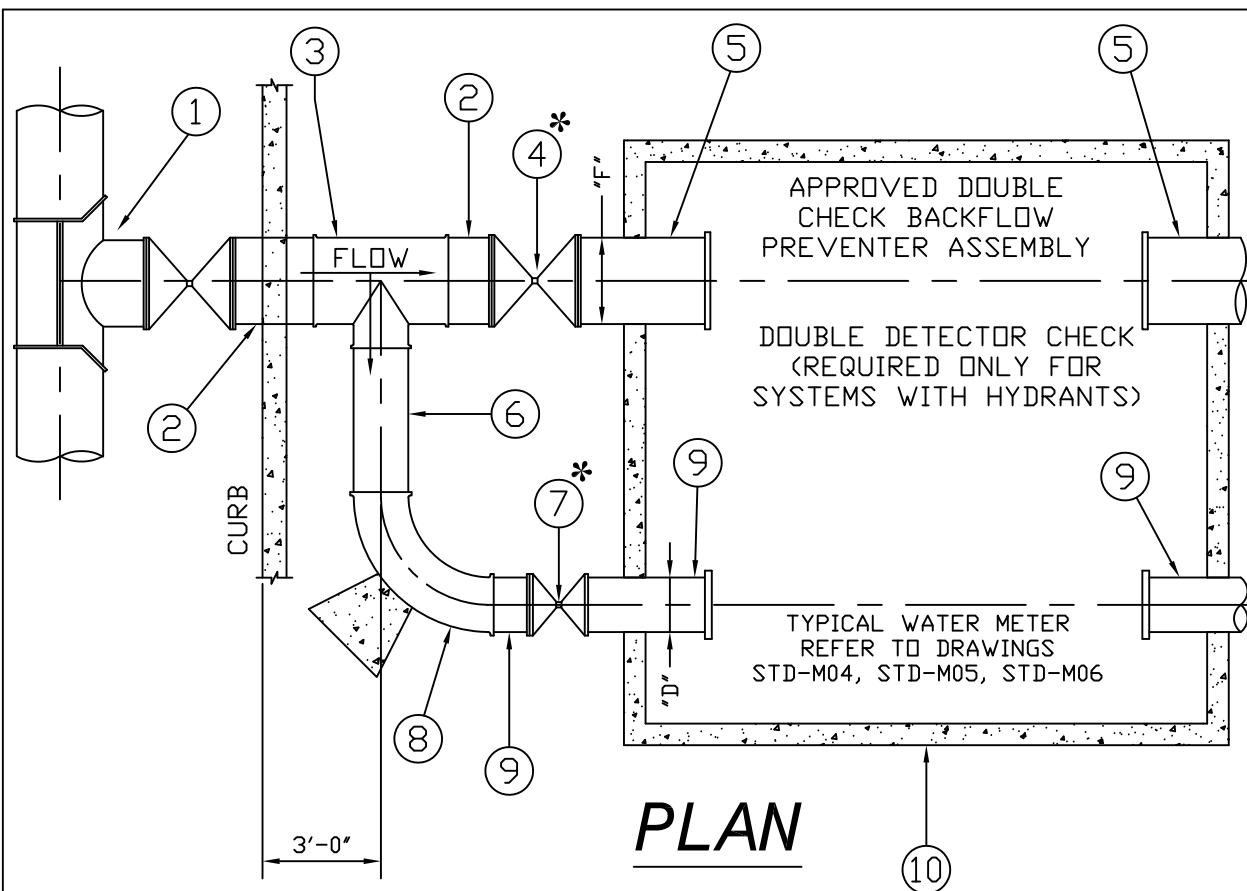
-SCALE-

DATE 10-1-1997

NONE

CHECKED BY MJS DATE 10-1-97

STD-V02



- ① (1) S.O.M. x FIRE LINE ("F") SIZED MECHANICAL JOINT BRANCH SLEEVE AND "F" SQUARE HEAD GATE TAP VALVE WITH RETAINED MECHANICAL JOINT OUTLET AND VALVE BOX COMPLETE.
- ② X FEET "F" DUCTILE IRON CLASS 52 CEMENT LINED PLAIN END x PLAIN END PIPE (CUT TO SUIT). (IF PIPE IS LONGER THAN 1 PIPE LENGTH, THEN THE PIPE IS TO HAVE TYPE II BOLTLESS RESTRAINED PUSH-ON JOINTS.
- ③ (1) "F" x "F" x "D" DUCTILE IRON CLASS 350 CEMENT LINED RETAINED MECHANICAL JOINT TEE. *
- ④ (1) "F" RETAINED MECHANICAL JOINT, SQUARE HEAD GATE VALVE WITH VALVE BOX COMPLETE.
- ⑤ X FEET "F" PLAIN END x FLANGED DUCTILE IRON CLASS 52 CEMENT LINED PIPE (CUT TO SUIT).
- ⑥ X FEET "D" PLAIN END x PLAIN END DUCTILE IRON CLASS 52 CEMENT LINED PIPE (CUT TO SUIT).
- ⑦ (1) - "D" RETAINED MECHANICAL JOINT SQUARE HEAD GATE VALVE WITH VALVE BOX COMPLETE.
- ⑧ (1) - "D" RETAINED MJ x MJ DUCTILE IRON CLASS 350 CEMENT LINED 90° BEND WITH CONCRETE PIER.
- ⑨ X FEET "D" PLAIN END x FLANGED END DUCTILE IRON CLASS 52 CEMENT LINED PIPE (CUT TO SUIT).
- ⑩ (1) - APPROVED PRE-CAST COMBINATION VAULT.

* CURB VALVES MUST BE LOCATED IN THE RIGHT OF WAY BUT MAY NOT BE LOCATED IN THE PAVEMENT/ROADWAY.

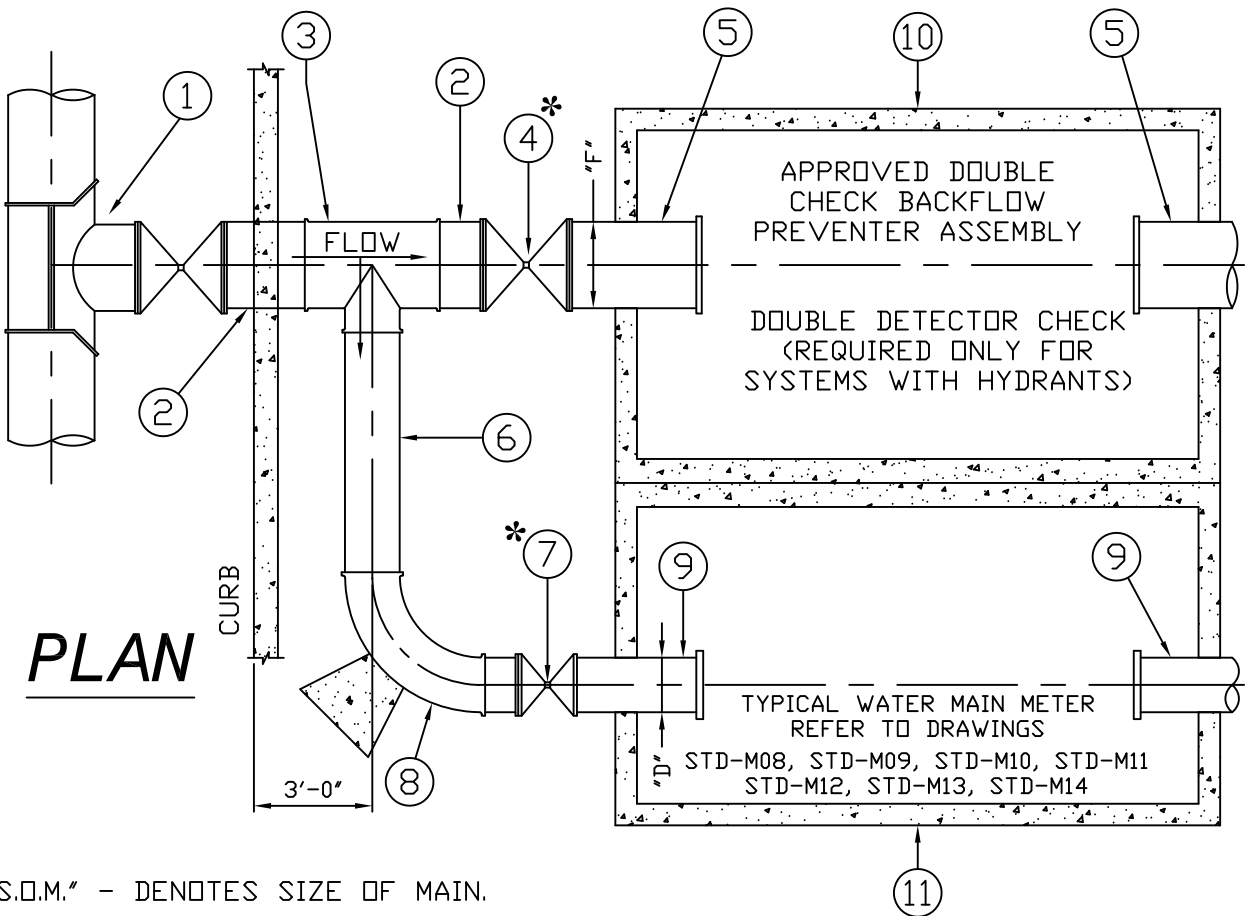
"S.O.M." - DENOTES SIZE OF MAIN.

"F" - DENOTES NOMINAL PIPE DIAMETER OF FIRE LINE.

"D" - DENOTES NOMINAL PIPE DIAMETER OF DOMESTIC LINE.

* MAY SUBSTITUTE "F" x "F" x "F" DUCTILE IRON CLASS 350 CEMENT LINED RETAINED MECHANICAL JOINT TEE AND "F" x "D" DUCTILE IRON CLASS 350 CEMENT LINED RETAINED MECHANICAL JOINT PLAIN END x PLAIN END REDUCER FOR ITEM
 - VAULTS MUST ALSO BE COMPLIANT WITH NFPA 13, UNLESS OTHERWISE DIRECTED BY THE LOCAL FIRE DEPARTMENT. SEE FIGURE A.16.12 - "TYPICAL CITY WATER PIT" IN NFPA 13 (2019 EDITION). ALL FIRELINES MUST BE APPROVED BY THE LOCAL FIRE DEPARTMENT
 - METERS IN VAULTS MUST BE ABLE TO BE READ FROM ABOVE WITHOUT ENTRY. IF NO CLEAR LINE OF SITE TO THE METER CAN BE ACHIEVED BY PLACEMENT OF THE ACCESS MANHOLE, AS DETERMINED BY THE DIVISION OF WATER CONTRACTOR MAY ORDER PRECAST MANHOLE WITH VIEWING PORT OPENING OR CORE OPENING ONSITE. ALL TRAFFIC BEARING AND NON-TRAFFIC BEARING VAULTS MUST MAINTAIN THEIR DESIGNED STRUCTURAL INTEGRITY AND CASTING SHALL BE SECURE FOR ROAD TRAFFIC. CONTRACTOR IS REQUIRED TO CALL THE PERMITS AND SALES UNIT OF THE DIVISION OF WATER AT 216-664-2444 EXT. 75209 FOR INSPECTION OF ANY VAULT SET.

STANDARD DETAILS		
DEPARTMENT OF PUBLIC UTILITIES DIVISION OF WATER CLEVELAND, OHIO		
SUBJECT_SINGLE FEED/COMBINATION VAULT DOMESTIC - FIRELINE CONNECTION 3" DOMESTIC/4"-8" FIRELINE		
DRAWN BY <u>RSK</u>	-SCALE-	STD-V03
DATE: <u>2-25-2009</u>	<u>NONE</u>	
CHECKED BY _____	DATE _____	



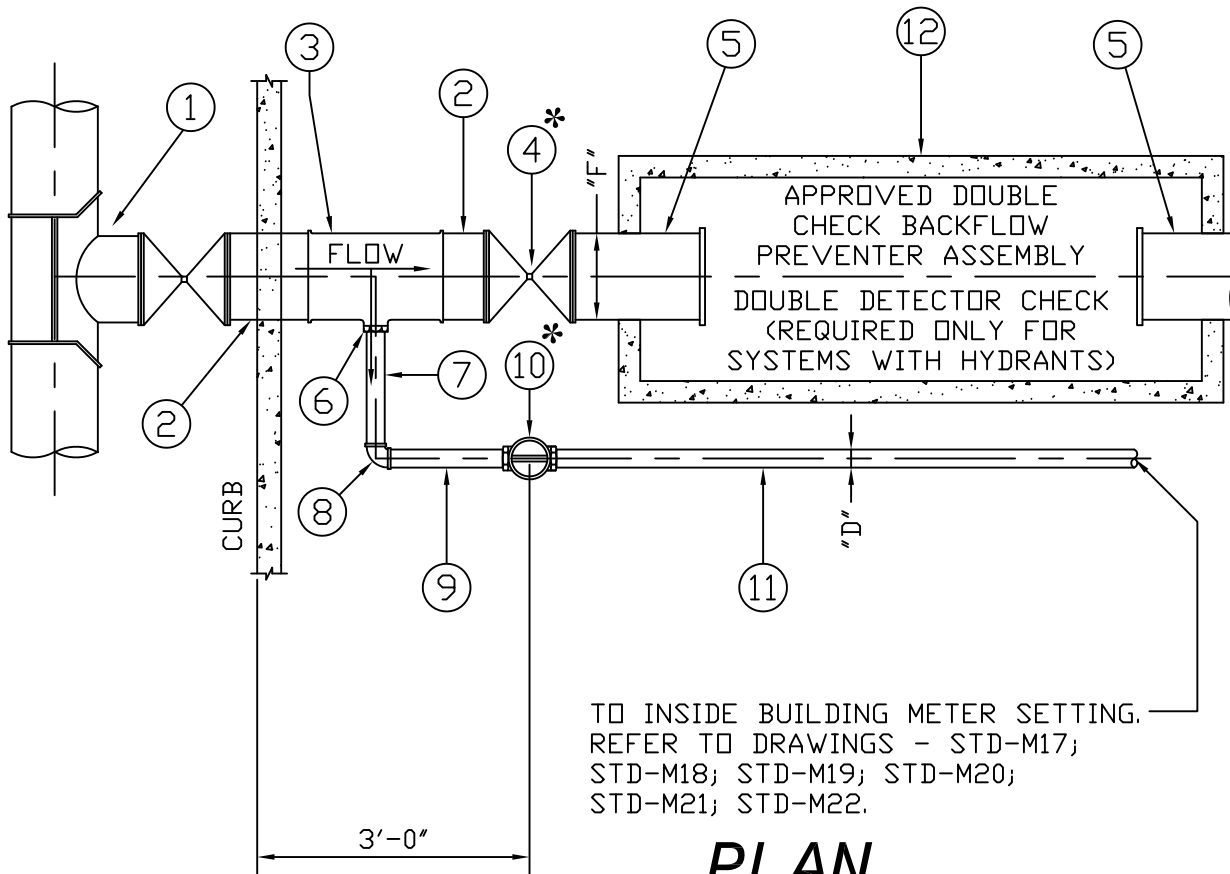
PLAN

- ① (1) S.O.M. x FIRE LINE ("F") SIZED MECHANICAL JOINT BRANCH SLEEVE AND "F" SQUARE HEAD GATE TAP VALVE WITH RETAINED MECHANICAL JOINT OUTLET AND VALVE BOX COMPLETE.
- ② X FEET "F" DUCTILE IRON CLASS 52 CEMENT LINED PLAIN END x PLAIN END PIPE (CUT TO SUIT). (IF PIPE IS LONGER THAN 1 PIPE LENGTH, THEN THE PIPE IS TO HAVE TYPE II BOLTLESS RESTRAINED PUSH-ON JOINTS).
- ③ (1) "F" x "F" x "D" DUCTILE IRON CLASS 350 CEMENT LINED RETAINED MECHANICAL JOINT TEE. *
- ④ (1) "F" RETAINED MECHANICAL JOINT, SQUARE HEAD GATE VALVE WITH VALVE BOX COMPLETE.
- ⑤ X FEET "F" PLAIN END x FLANGED DUCTILE IRON CLASS 52 CEMENT LINED PIPE (CUT TO SUIT).
- ⑥ X FEET "D" PLAIN END x PLAIN END DUCTILE IRON CLASS 52 CEMENT LINED PIPE (CUT TO SUIT).
- ⑦ (1) - "D" RETAINED MECHANICAL JOINT SQUARE HEAD GATE VALVE WITH VALVE BOX COMPLETE.
- ⑧ (1) - "D" RETAINED MJ x MJ DUCTILE IRON CLASS 350 CEMENT LINED 90° BEND WITH CONCRETE PIER.
- ⑨ X FEET "D" PLAIN END x FLANGED END DUCTILE IRON CLASS 52 CEMENT LINED PIPE (CUT TO SUIT).
- ⑩ (1) - APPROVED PRE-CAST FIRELINE VAULT.
- ⑪ (1) - APPROVED PRE-CAST DOMESTIC VAULT.

* CURB VALVES MUST BE LOCATED IN THE RIGHT OF WAY BUT MAY NOT BE LOCATED IN THE PAVEMENT/ROADWAY.

"S.O.M." - DENOTES SIZE OF MAIN.
 "F" - DENOTES NOMINAL PIPE DIAMETER OF FIRE LINE.
 "D" - DENOTES NOMINAL PIPE DIAMETER OF DOMESTIC LINE.
 * MAY SUBSTITUTE "F" x "F" x "F" DUCTILE IRON CLASS 350 CEMENT LINED RETAINED MECHANICAL JOINT TEE AND "F" x "D" DUCTILE IRON CLASS 350 CEMENT LINED RETAINED MECHANICAL JOINT PLAIN END x PLAIN END REDUCER FOR ITEM ③.
 - VAULTS MUST ALSO BE COMPLIANT WITH NFPA 13, UNLESS OTHERWISE DIRECTED BY THE LOCAL FIRE DEPARTMENT. SEE FIGURE A.16.12 - "TYPICAL CITY WATER PIT" IN NFPA 13 (2019 EDITION). ALL FIRELINES MUST BE APPROVED BY THE LOCAL FIRE DEPARTMENT
 - METERS IN VAULTS MUST BE ABLE TO BE READ FROM ABOVE WITHOUT ENTRY. IF NO CLEAR LINE OF SITE TO THE METER CAN BE ACHIEVED BY PLACEMENT OF THE ACCESS MANHOLE, AS DETERMINED BY THE DIVISION OF WATER CONTRACTOR MAY ORDER PRECAST MANHOLE WITH VIEWING PORT OPENING OR CORE OPENING ONSITE. ALL TRAFFIC BEARING AND NON-TRAFFIC BEARING VAULTS MUST MAINTAIN THEIR DESIGNED STRUCTURAL INTEGRITY AND CASTING SHALL BE SECURE FOR ROAD TRAFFIC. CONTRACTOR IS REQUIRED TO CALL THE PERMITS AND SALES UNIT OF THE DIVISION OF WATER AT 216-664-2444 EXT. 75209 FOR INSPECTION OF ANY VAULT SET.

STANDARD DETAILS		
DEPARTMENT OF PUBLIC UTILITIES DIVISION OF WATER CLEVELAND, OHIO		
SUBJECT <u>SINGLE FEED/SEPARATE VAULTS</u> <u>DOMESTIC - FIRELINE CONNECTION</u> <u>4"-12" DOMESTIC/4"-12" FIRELINE</u>		
DRAWN BY <u>RSK</u>	-SCALE-	STD-V04
DATE <u>2-25-2009</u>	<u>NONE</u>	
CHECKED BY _____	DATE _____	



PLAN

"S.O.M." - DENOTES SIZE OF MAIN.

"F" - DENOTES NOMINAL PIPE DIAMETER OF FIRE LINE

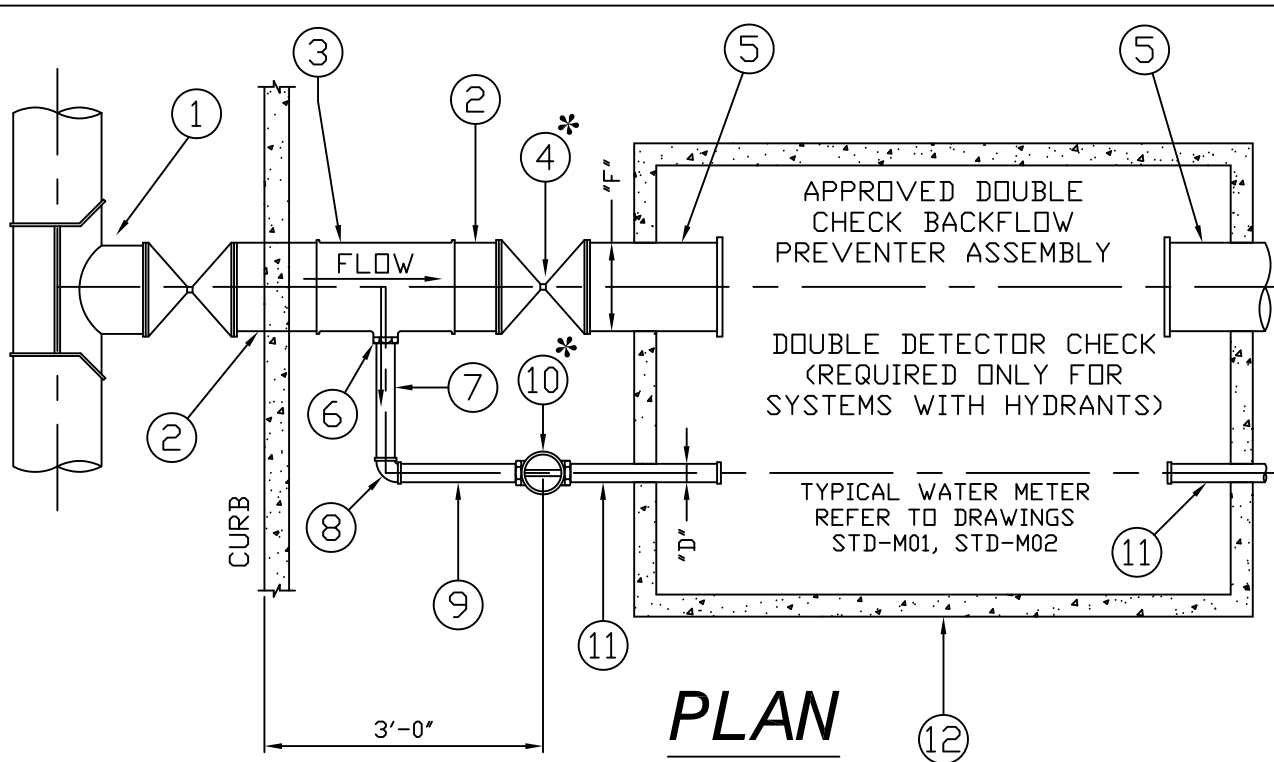
"D"- DENOTES NOMINAL PIPE DIAMETER OF DOMESTIC LINE

VAULTS MUST ALSO BE COMPLIANT WITH NFPA 13, UNLESS OTHERWISE DIRECTED BY THE LOCAL FIRE DEPARTMENT. SEE FIGURE A.16.12 - "TYPICAL CITY WATER PIT" IN NFPA 13 (2019 EDITION). ALL FIRELINES MUST BE APPROVED BY THE LOCAL FIRE DEPARTMENT

- ① (1) S.O.M. x FIRE LINE ("F") SIZED MECHANICAL JOINT BRANCH SLEEVE AND "F" SQUARE HEAD GATE TAP VALVE WITH RETAINED MECHANICAL JOINT OUTLET AND VALVE BOX COMPLETE.
- ② X FEET "F" DUCTILE IRON CLASS 52 CEMENT LINED PLAIN END x PLAIN END PIPE (CUT TO SUIT). (IF PIPE IS LONGER THAN 1 PIPE LENGTH, THEN THE PIPE IS TO HAVE TYPE II BOLTLESS RESTRAINED PUSH-ON JOINTS.
- ③ (1) "F" x "F" x "D" DUCTILE IRON CLASS 350 CEMENT LINED RETAINED MECHANICAL JOINT TAPPED TEE WITH CONCRETE PIER.
- ④ (1) "F" RETAINED MECHANICAL JOINT, SQUARE HEAD GATE VALVE WITH VALVE BOX COMPLETE.
- ⑤ X FEET "F" PLAIN END x FLANGED DUCTILE IRON CLASS 52 CEMENT LINED PIPE (CUT TO SUIT).
- ⑥ OPTIONAL (1)-THREADED REDUCING BUSHING
- ⑦ X FEET "D" THREADED END x THREADED END TYPE "K" COPPER.
- ⑧ (1)-THREADED BRASS 90° ELBOW.
- ⑨ X FEET "D" THREADED END x THREADED END TYPE "K" COPPER.
- ⑩ (1)-"D" THREADED TYPE ORISEAL CURB VALVE WITH VALVE BOX COMPLETE.
- ⑪ X FEET "D" TYPE "K" COPPER PIPE (CUT TO SUIT).
- ⑫ (1)-APPROVED PRE-CAST FIRELINE VAULT.

* CURB VALVES MUST BE LOCATED IN THE RIGHT OF WAY

STANDARD DETAILS		
DEPARTMENT OF PUBLIC UTILITIES DIVISION OF WATER CLEVELAND, OHIO		
SUBJECT <u>SINGLE FEED/SINGLE VAULT FOR</u>		
FIRELINE CONNECTION/DOMESTIC CONNECTION WITH		
REMOTE METER/ 1'-2" DOMESTIC/4'-12" FIRELINE		
DRAWN BY <u>RSK</u>	-SCALE-	
DATE <u>11-16-2009</u>	NONE	
CHECKED BY _____	DATE _____	STD-V05



PLAN

- ① (1) S.O.M. x FIRE LINE ("F") SIZED MECHANICAL JOINT BRANCH SLEEVE AND "F" SQUARE HEAD GATE TAP VALVE WITH RETAINED MECHANICAL JOINT OUTLET AND VALVE BOX COMPLETE.
- ② X FEET "F" DUCTILE IRON CLASS 52 CEMENT LINED PLAIN END x PLAIN END PIPE (CUT TO SUIT). (IF PIPE IS LONGER THAN 1 PIPE LENGTH, THEN THE PIPE IS TO HAVE TYPE II BOLTLESS RESTRAINED PUSH-ON JOINTS).
- ③ (1) "F" x "F" x "D" DUCTILE IRON CLASS 350 CEMENT LINED RETAINED MECHANICAL JOINT TAPPED TEE WITH CONCRETE PIER.
- ④ (1) "F" RETAINED MECHANICAL JOINT, SQUARE HEAD GATE VALVE WITH VALVE BOX COMPLETE.
- ⑤ X FEET "F" PLAIN END x FLANGED DUCTILE IRON CLASS 52 CEMENT LINED PIPE (CUT TO SUIT).
- ⑥ OPTIONAL (1)-THREADED REDUCING BUSHING
- ⑦ X FEET "D" THREADED END x THREADED END TYPE "K" COPPER.
- ⑧ (1)-THREADED BRASS 90° ELBOW.
- ⑨ X FEET "D" THREADED END x THREADED END TYPE "K" COPPER.
- ⑩ (1)-"D" THREADED TYPE ORISEAL CURB VALVE WITH VALVE BOX COMPLETE.
- ⑪ X FEET "D" TYPE "K" COPPER PIPE (CUT TO SUIT).
- ⑫ (1)-APPROVED PRE-CAST FIRELINE VAULT.

* CURB VALVES MUST BE LOCATED IN THE RIGHT OF WAY

"S.O.M." - DENOTES SIZE OF MAIN.

"F" - DENOTES NOMINAL PIPE DIAMETER OF FIRE LINE.

"D" - DENOTES NOMINAL PIPE DIAMETER OF DOMESTIC LINE.

- VAULTS MUST ALSO BE COMPLIANT WITH NFPA 13, UNLESS OTHERWISE DIRECTED BY THE LOCAL FIRE DEPARTMENT. SEE FIGURE A.16.12 - "TYPICAL CITY WATER PIT" IN NFPA 13 (2019 EDITION). ALL FIRELINES MUST BE APPROVED BY THE LOCAL FIRE DEPARTMENT

- METERS IN VAULTS MUST BE ABLE TO BE READ FROM ABOVE WITHOUT ENTRY. IF NO CLEAR LINE OF SITE TO THE METER CAN BE ACHIEVED BY PLACEMENT OF THE ACCESS MANHOLE, AS DETERMINED BY THE DIVISION OF WATER CONTRACTOR MAY ORDER PRECAST MANHOLE WITH VIEWING PORT OPENING OR CORE OPENING ONSITE. ALL TRAFFIC BEARING AND NON-TRAFFIC BEARING VAULTS MUST MAINTAIN THEIR DESIGNED STRUCTURAL INTEGRITY AND CASTING SHALL BE SECURE FOR ROAD TRAFFIC. CONTRACTOR IS REQUIRED TO CALL THE PERMITS AND SALES UNIT OF THE DIVISION OF WATER AT 216-664-2444 EXT. 75209 FOR INSPECTION OF ANY VAULT SET.

STANDARD DETAILS		
DEPARTMENT OF PUBLIC UTILITIES DIVISION OF WATER CLEVELAND, OHIO		
SUBJECT <u>SINGLE FEED/COMBINATION VAULT</u> <u>DOMESTIC - FIRELINE CONNECTION</u> <u>1"-2" DOMESTIC/4"-8" FIRELINE</u>		
DRAWN BY <u>RSK</u>	-SCALE-	STD-V06
DATE <u>11-16-2009</u>	<u>NONE</u>	
CHECKED BY _____	DATE _____	