

**SECTION IV**  
**WATER MAINS**

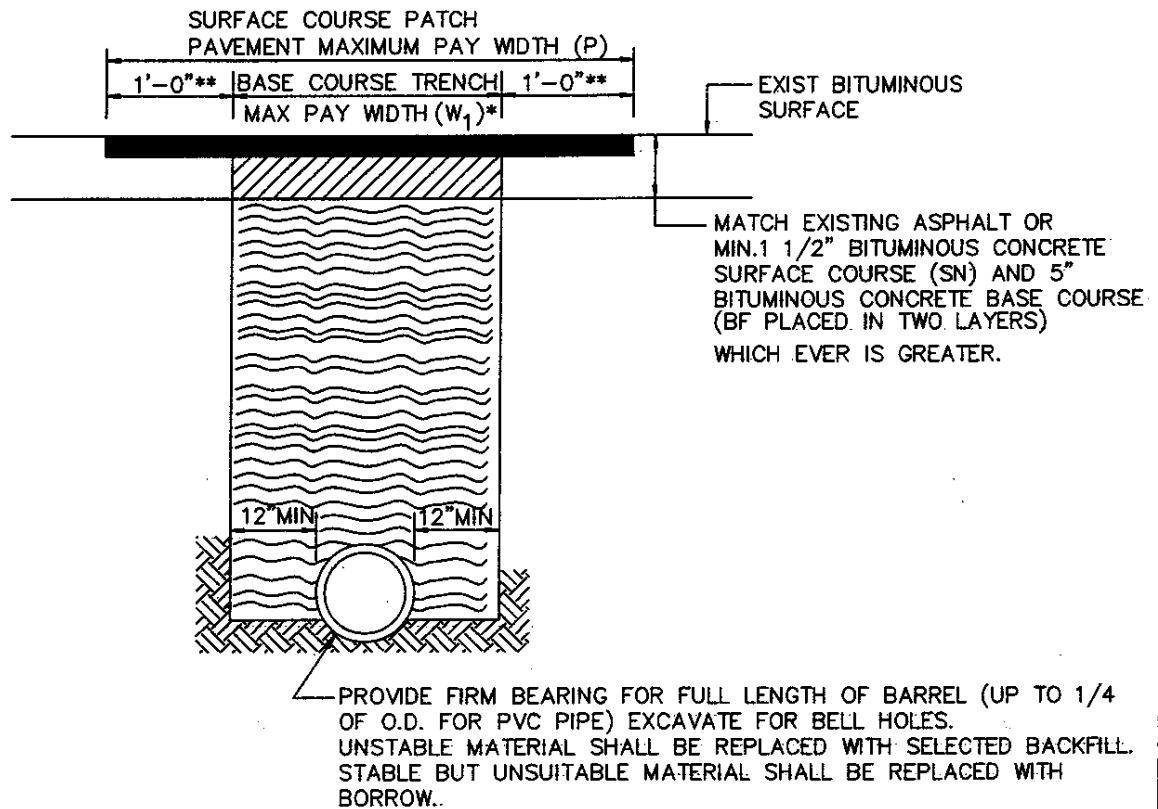
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### STANDARD WATER DETAILS

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DETAIL OF CUTTING & REPLACING PAVEMENT IN ROADWAYS OTHER THAN STATE ROADS (BITUMINOUS CONCRETE FOR SURFACE COURSE AND BASE COURSE IN LBS.PER LINEAR FOOT PER INCH ARE FOR ESTIMATING ONLY)

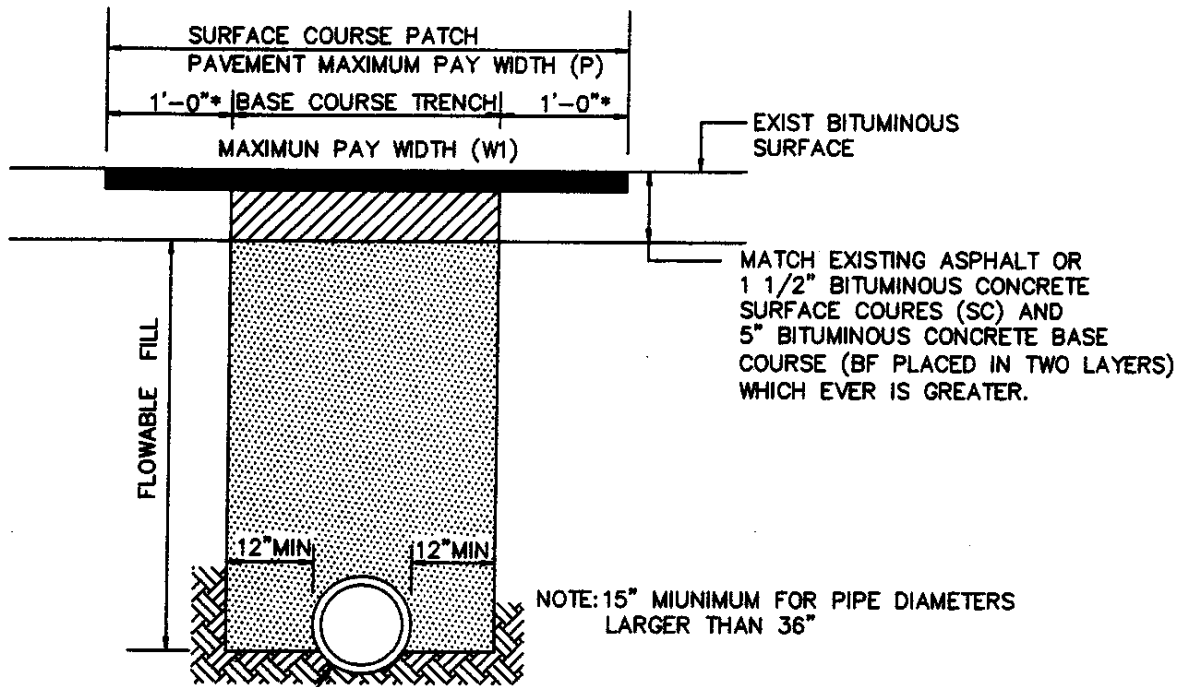
PIPE DIAMETER	MAXIMUM TRENCH PAY WIDTH	PATCH PAVEMENT PAY QUANTITIES			
		BIT. CONC SURFACE COURSE		BIT. CONC. BASE COURSE	
		SQ.YDS./L.F.	LBS./L.F./INCH-DEPTH*	SQ.YDS./L.F.	LBS./L.F./INCH-DEPTH*
UNDER 21"	60"	0.78	88 LBS.	0.56	63 LBS.
21" - 24"	66"	0.83	94 LBS.	0.61	69 LBS.
27" - 30"	72"	0.89	100 LBS.	0.67	75 LBS.
33" - 36"	78"	0.94	106 LBS.	0.72	81 LBS.

\* BASED ON 150 LBS/FT<sup>3</sup>

NOTES:

- TEMPORARY SURFACE (EITHER GRADED AGGREGATE OR BITUMINOUS CONCRETE TO BE INSTALLED AND MAINTAINED AT THE CONTRACTORS EXPENSE.
- CONTRACTOR RESPONSIBLE FOR TRENCH SUPPORT.
- AGGREGATE SUBBASE SHALL BE CLEANED AND THOROUGHLY COMPACTED PRIOR TO PLACING PERMANENT PAVEMENT MATERIAL.
- TRENCH SUPPORT MATERIAL TO BE REMOVED IN SUCH A MANNER THAT BACKFILL MATERIAL FOR FIRST TWO FEET ABOVE PIPE WILL BE COMPACTED AGAINST UNDISTURBED EARTH.
- NOTED PAY WIDTHS ARE TO BE USED FOR MEASUREMENT REGARDLESS OF METHOD USED TO SUPPORT TRENCH.
- CONTRACTOR RESPONSIBLE FOR MAINTAINING TEMPORARY TRENCH SURFACE PRIOR TO PLACING PERMANENT PAVING.
- FOR COMPACTION AND AGGREGATE DETAILS AND TRENCH PAY WIDTHS QUANTITIES SEE STD. PLATES W/1B.
- AREA TO BE MILLED TO A DEPTH OF 1 1/2" TO ACCOMMODATE PLACEMENT OF THE BITUMINOUS CONCRETE SURFACE COURSE.
- SURFACE COURSE PATCH PAVING SHALL EXTEND A MINIMUM DISTANCE OF 1'-0" BEYOND ANY DISTURBED SURFACE PAVEMENT INDEPENDENT OF THE SURFACE COURSE PATCH PAVEMENT MAXIMUM PAY WIDTH.
- REQUIRED THAT FLOWABLE FILL BE USED IN TRENCHES IN ROADS CLASSIFIED AS ARTERIAL OR ANY ROAD WHOSE PAVEMENT IS CUT WITHIN FIVE (5) YEARS OF THE ROAD BEING CONSTRUCTED OR RESURFACED SEE PLATE W/1B.

ANNE ARUNDEL COUNTY DEPARTMENT OF PUBLIC WORKS	APPROVED <i>Ronald C. Brown 5/17/89</i> CHIEF ENGINEER	STANDARD WATER DETAILS REPAVING TRENCHES AND PAYMENT QUANTITIES	REVISED	W 1
	DESIGN ENGINEER <i>[Signature]</i> DATE:			



NOTE: 15" MIUNIMUM FOR PIPE DIAMETERS LARGER THAN 36"

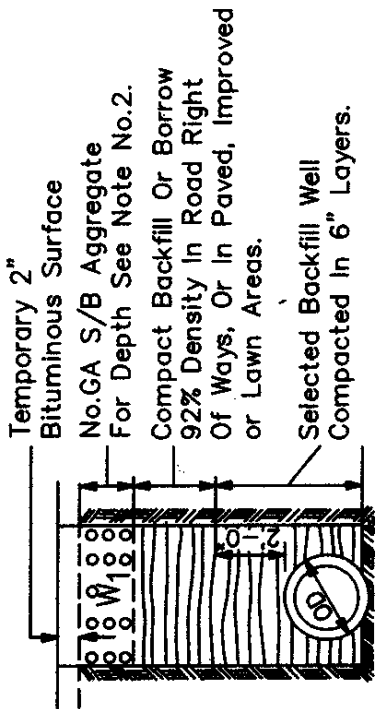
PROVIDE FIRM BEARING FOR FULL LENGTH OF BARREL (UP TO 1/4 OF O.D. FOR PVC PIPE) EXCAVATE FOR BELL HOLES. UNSTABLE MATERIAL SHALL BE REPLACED WITH SELECTED BACKFILL. STABLE BUT UNSUITABLE MATERIAL SHALL BE REPLACED WITH BORROW.

- NOTES:
1. TEMPORARY SURFACE(EITHER GRADED AGGREGATE OR BITUMINOUS CONCRETE) TO BE INSTALLED AND MAINTAINED AT THE CONTRACTORS EXPENSE.
  2. CONTRACTOR RESPONSIBLE FOR TRENCH SUPPORT.
  3. PRIOR TO PLACEMENT OF THE FLOWABLE FILL THE CONTRACTOR SHALL PROVIDE POSITIVE CONTAINMENT OF THE FLOWABLE FILL MATERIAL TO PREVENT FLOW BEYOND THE DESIRED PLACEMENT LOCATION.
  4. FOR PAY WIDTH QUANTIES SEE STANDARD PLATE W/1.
  5. CONTRACTOR RESPONSIBLE FOR MAINTAINGIN TEMPORARY TRENCH SURFACE PRIOR TO PLACENG PERMANENT PAVING.
  - \* 6. AREA TO BE MILLED TO A DEPTH OF 1 1/2" TO ACCOMODATE PLACEMENT OF THE BITUMINOUS CONCRETE SURFACE COURSE.
  7. SURFACE COURSE PATCH PAVING SHALL EXTEND A MINIMUM DISTANCE OF 1'-0" BEYOND ANY DISTURBED SURFACE PAVEMENT INDEPENDENT OF THE SURFACE COURSE PATCH PAVEMENT MAXIMUM PAY WIDTH.
  8. REQUIRED THAT FLOWABLE FILL BE USED IN TRENCHES IN ROADS CLASSIFIED AS ARTERIAL OR ANY ROAD WHOSE PAVEMENT IS CUT WITHIN FIVE YEARS OF THE ROAD BEING CONSTRUCTED OR RESURFACED

ANNE ARUNDEL COUNTY DEPARTMENT OF PUBLIC WORKS	APPROVED <i>Ronald Bowen</i> 5/17/99 CHIEF ENGINEER	STANDARD WATER DETAILS  TRENCH DETAIL FOR FLOWABLE FILL	REVISED	$\frac{W}{1 A}$
	DATE: <i>4/12/99</i> DESIGN ENGINEER			

**NOTES:**

1. Temporary surface to be maintained at contractors expense.
2. Aggregate quantities are based on: Depth-6" for Dirt Roads, Shoulders, Driveways, Sidewalks, etc. 12" for Paved Roads and Shoulders.  
Weight-130 Lbs. Per Cubic Foot.
3. See detail W/1 for method of cutting & repairing openings in county roadways.



**TRENCHES IN ROADS OTHER THAN STATE ROADS**

CIRCULAR			
PIPE DIAMETER	MINIMUM TRENCH PAY WIDTH (WT)	SQ. YDS./L.F.	GA S/B LBS./L.F./INCH-DEPTH*
UNDER 21"	60"	0.56	54 LBS.
21" - 24"	66"	0.61	60 LBS.
27" - 30"	72"	0.67	65 LBS.
33" - 36"	78"	0.72	70 LBS.

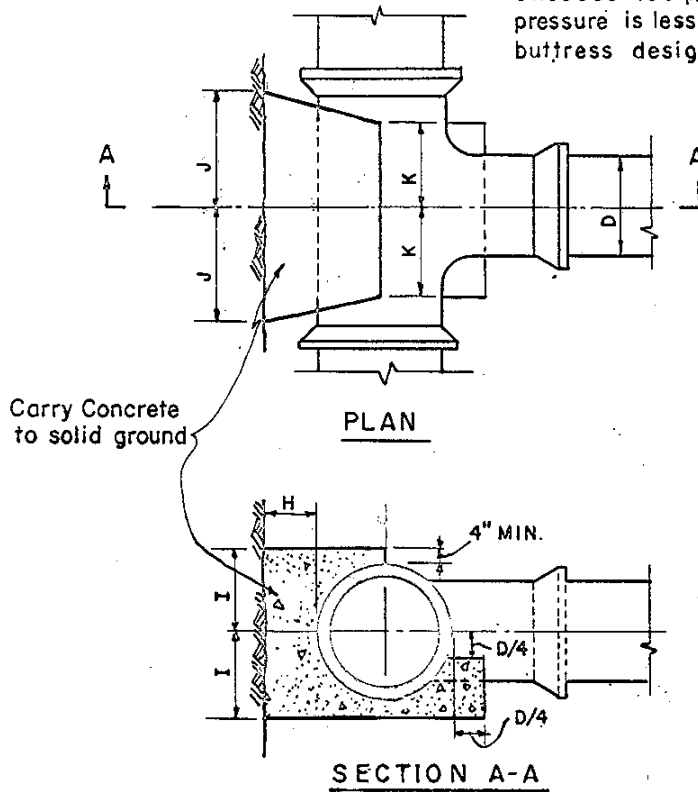
\* BASED ON 130 LBS./FT.<sup>3</sup>

GA S/B = Graded Aggregate for Subbase in LBS. per Linear Foot per inch-depth, For Estimating only.

ANNE ARUNDEL COUNTY DEPARTMENT OF PUBLIC WORKS	APPROVED: <i>[Signature]</i> CHIEF ENGINEER DATE: 5/17/99	DESIGN ENGINEER DATE: 4/12/99	REVISED
<b>STANDARD WATER DETAILS</b> <b>TEMPORARY PAVEMENT, TRENCH DETAILS &amp; CRUSHER RUN STONE PAYMENT QUANTITIES</b>			<b>W</b> <hr style="width: 50%; margin: 0 auto;"/> <b>1B</b>

Notes:



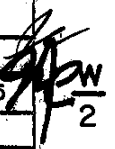
1. All concrete shall be Mix No. 1.
2. Buttress dimensions shown are minimum. Dimensions are based upon soil bearing pressure of 3000 p.s.f. and static water pressure of 150 p.s.i. Where pressure exceeds 150 psi. or where soil bearing pressure is less than 3000 p.s.f. special buttress design is required.

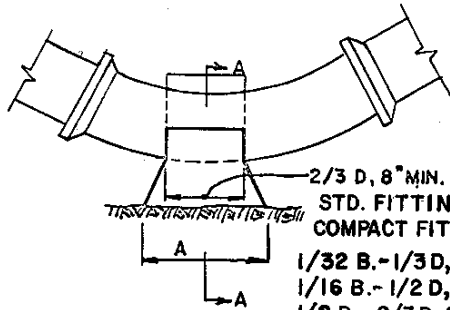


BUTTRESS FOR TEES									
SIZE OF BRANCH									
D	6"	8"	10"	12"	16"	20"	24"	30"	36"
H	8"	9"	10"	1'-0"	1'-2"	1'-4"	1'-6"	1'-9"	2'-0"
I	8"	10"	1'-0"	1'-3"	1'-8"	2'-1"	2'-6"	3'-1"	3'-9"
J	7"	9"	1'-0"	1'-2"	1'-6"	1'-11"	2'-4"	2'-10"	3'-5"
K	6"	8"	8"	8"	10"	1'-2"	1'-4"	1'-6"	1'-10"
K*	5"	5"	5"	5"					

K\* FOR COMPACT FITTINGS

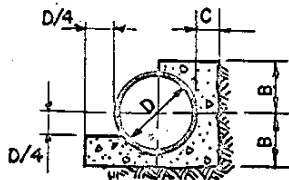
BUTTRESS FOR TEES

ANNE ARUNDEL COUNTY DEPARTMENT OF PUBLIC WORKS	APPROVED  CHIEF ENGINEER	STANDARD WATER DETAILS BUTTRESS FOR TEES	REVISED 5/6/88
	 DESIGN ENGINEER		10 / 95
	DATE: 6/5/84		
			2



2/3 D, 8" MIN. FOR  
STD. FITTING, FOR  
COMPACT FITTINGS:  
1/32 B.-1/3 D, 3" MIN.  
1/16 B.-1/2 D, 4" MIN.  
1/8 B.-2/3 D, 6" MIN.  
1/4 B.-2/3 D, 6" MIN.

PLAN



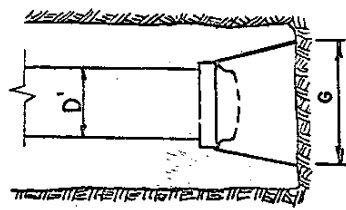
SECTION A-A

BUTTRUSS FOR HORIZONTAL BENDS									
BEND	6"	8"	10"	12"	16"	20"	24"	30"	36"
1/64	A					1'-8"	2'-0"	2'-6"	3'-0"
	B					10"	1'-0"	1'-3"	1'-6"
	C					10"	1'-0"	1'-1"	1'-2"
1/32	A	6"	6"	10"	1'-0"	1'-4"	1'-6"	2'-0"	2'-6"
	B	7"	8"	9"	10"	1'-0"	1'-2"	1'-4"	1'-7"
	C	7"	7"	8"	8"	9"	10"	1'-0"	1'-1"
1/16	A	9"	1'-0"	1'-6"	1'-9"	2'-3"	3'-0"	3'-6"	4'-2"
	B	7"	8"	9"	10"	1'-0"	1'-2"	1'-4"	1'-7"
	C	8"	9"	10"	11"	1'-2"	1'-4"	1'-6"	1'-9"
1/8	A	1'-3"	1'-8"	2'-1"	2'-6"	3'-4"	4'-2"	5'-0"	6'-3"
	B	7"	8"	9"	11"	1'-3"	1'-6"	1'-8"	2'-0"
	C	8"	9"	10"	11"	1'-2"	1'-4"	1'-9"	2'-3"
1/4	A	2'-0"	2'-6"	3'-0"	3'-6"	5'-0"	SPECIAL DESIGN		
	B	0'-6"	0'-9"	1'-0"	1'-3"	1'-6"	SPECIAL DESIGN		
	C	1'-10"	1'-9"	1'-8"	1'-7"	1'-5"	SPECIAL DESIGN		

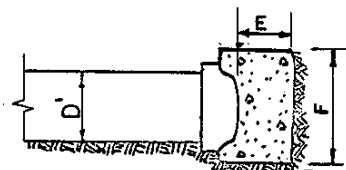
**BUTTRUSS FOR HORIZONTAL BENDS**

**Notes**

- 1.) All concrete shall be Mix No. 1.
- 2.) Buttress dimensions shown are minimum. Dimensions are based upon soil bearing pressure of 3000 p.s.f. and static water pressure of 150 p.s.i. Where pressure exceeds 150 p.s.i. or where soil bearing pressure is less than 3000 ps.f. special buttress design is required.



PLAN



SECTION

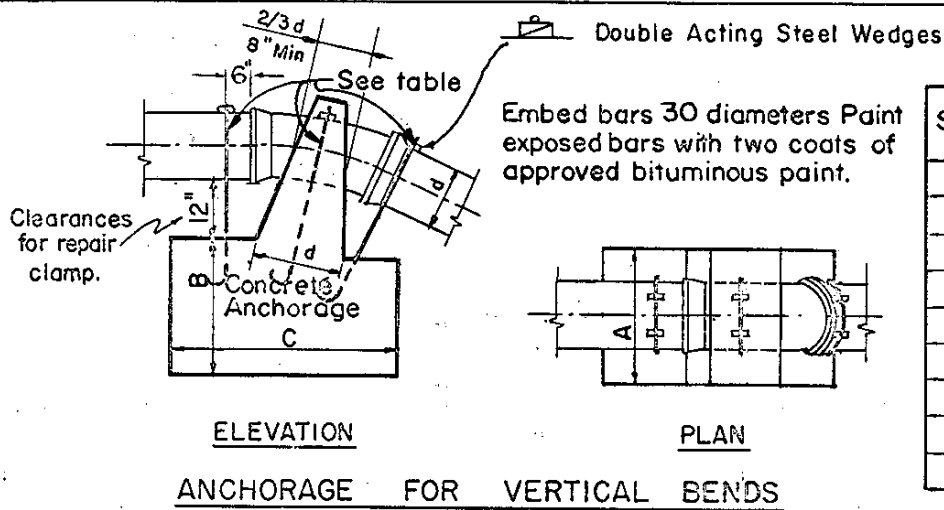
CARRY CONCRETE TO SOLID GROUND

**BUTTRUSS FOR CAPS AND PLUGS**

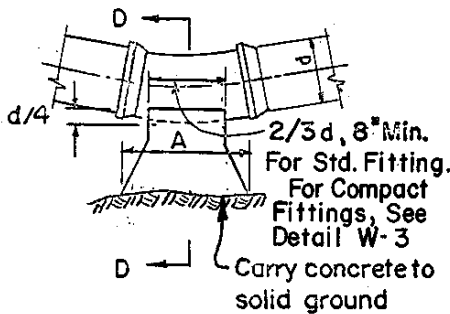
BUTTRUSS FOR CAPS									
D'	6"	8"	10"	12"	16"	20"	24"	30"	36"
E	6"	8"	8"	10"	1'-0"	1'-4"	1'-8"	2'-0"	2'-0"
F	1'-0"	1'-4"	1'-8"	2'-0"	2'-8"	3'-3"	4'-0"	4'-9"	5'-9"
G	1'-5"	1'-11"	2'-5"	2'-10"	3'-9"	4'-9"	5'-8"	7'-6"	8'-10"

ANNE ARUNDEL COUNTY DEPARTMENT OF PUBLIC WORKS	APPROVED: <i>[Signature]</i> CHIEF ENGINEER	STANDARD WATER DETAILS BUTTRASSES FOR CAPS AND HORIZONTAL BENDS	REVISED
	DESIGN ENGINEER: <i>[Signature]</i>		5/6/88 <i>[Signature]</i>
	DATE: 6/5/84		10 / 95 <i>[Signature]</i>

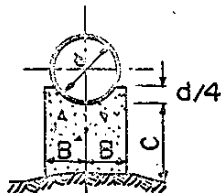




Size	Number And Size Reinforcing Bars			
	1/64	1/32	1/16	1/8
6"		3-#6	3-#6	3-#6
8"		3-#6	3-#6	3-#6
10"		3-#6	3-#6	3-#6
12"		3-#6	3-#6	3-#6
16"		3-#6	3-#6	3-#6
20"	3-#6	3-#6	3-#6	4-#6
24"	3-#6	3-#6	3-#6	5-#6
30"	3-#6	3-#6	5-#6	5-#7
36"	3-#6	4-#6	5-#7	6-#7



ELEVATION



SECTION D-D

**BUTTRESSES FOR VERTICAL BENDS**

**Notes:**

1. All concrete shall be mix no. 1.
2. Buttress dimensions shown are minimum. Dimension are based upon soil bearing pressure of 3000 p.s.f. and static water pressure of 150 p.s.i. Where pressure exceeds 150 p.s.i. or where soil bearing pressure is less than 3000 psf. special buttress design is required.

Bend		Buttresses For Vertical Bends								
		Size								
		6"	8"	10"	12"	16"	20"	24"	30"	36"
1/64	A						1'-8"	2'-0"	2'-6"	3'-0"
	B						10"	1'-0"	1'-3"	1'-6"
	C						10"	1'-0"	1'-1"	1'-2"
1/32	A	6"	8"	10"	10"	1'-4"	1'-8"	2'-0"	2'-6"	3'-0"
	B	7"	8"	9"	10"	1'-0"	1'-2"	1'-4"	1'-7"	1'-10"
	C	7"	7"	8"	8"	9"	10"	1'-0"	1'-1"	1'-2"
1/16	A	9"	1'-0"	1'-6"	1'-9"	2'-3"	3'-0"	3'-6"	4'-2"	5'-4"
	B	7"	7"	8"	10"	1'-0"	1'-2"	1'-4"	1'-7"	2'-0"
	C	7"	7"	8"	8"	9"	10"	1'-0"	1'-1"	1'-2"
1/8	A	1'-3"	1'-8"	2'-1"	2'-6"	3'-4"	4'-2"	5'-0"	6'-3"	7'-6"
	B	7"	8"	9"	11"	1'-3"	1'-6"	1'-9"	2'-3"	2'-6"
	C	7"	8"	10"	11"	1'-3"	1'-6"	1'-9"	2'-3"	2'-8"

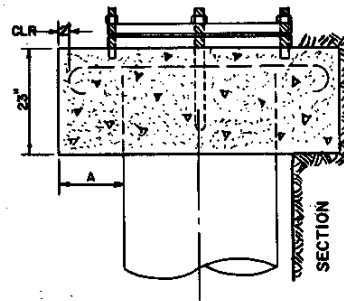
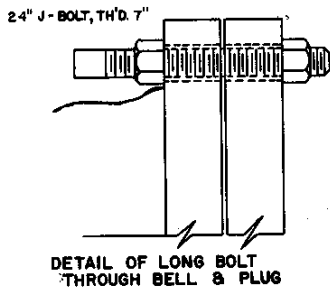
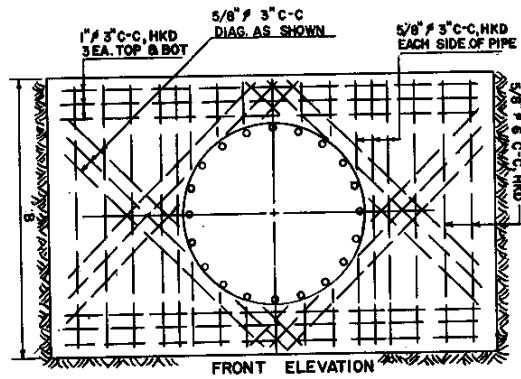
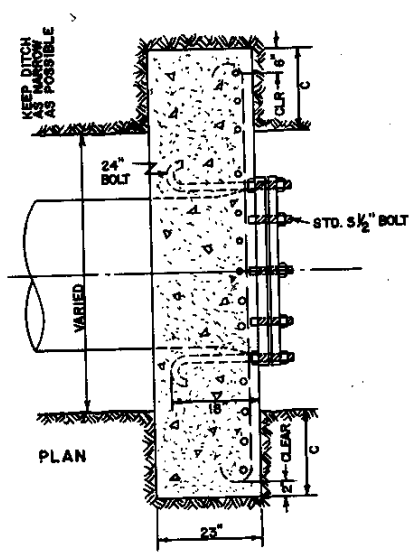
Bend		Anchorages For Vertical Bends								
		Size								
		6"	8"	10"	12"	16"	20"	24"	30"	36"
1/64	A						2'-2"	2'-6"	3'-6"	3'-6"
	B						2'-0"	2'-6"	2'-6"	3'-0"
	C						4'-6"	4'-6"	5'-0"	5'-0"
1/32	A	1'-6"	1'-6"	1'-5"	3'-0"	3'-6"	4'-0"	4'-3"	4'-6"	5'-0"
	B	1'-3"	1'-9"	1'-3"	2'-0"	2'-0"	2'-6"	2'-6"	2'-8"	4'-0"
	C	2'-0"	2'-6"	2'-9"	3'-0"	4'-0"	5'-0"	5'-9"	6'-6"	7'-0"
1/16	A	2'-0"	3'-4"	3'-8"	4'-0"	4'-4"	4'-8"	5'-0"	5'-4"	6'-0"
	B	1'-9"	2'-3"	2'-6"	2'-6"	2'-6"	2'-8"	3'-8"	4'-6"	5'-6"
	C	2'-6"	2'-8"	3'-10"	4'-0"	5'-6"	7'-6"	8'-6"	8'-6"	10'-0"
1/8	A	2'-6"	3'-0"	4'-0"	4'-6"	5'-2"	5'-6"	6'-0"	6'-6"	7'-6"
	B	2'-6"	2'-9"	3'-0"	3'-6"	4'-0"	4'-6"	5'-6"	6'-0"	6'-6"
	C	3'-0"	4'-0"	4'-6"	4'-9"	6'-6"	8'-0"	9'-6"	11'-0"	11'-6"

ANNE ARUNDEL COUNTY DEPARTMENT OF PUBLIC WORKS

APPROVED: *[Signature]*  
 CHIEF ENGINEER  
 DESIGN ENGINEER  
 DATE: 6/5/84

STANDARD WATER DETAILS  
 BUTTRESSES AND ANCHORAGES  
 FOR VERTICAL BENDS

REVISED  
 5/6/88  
 10 / 95  
 W  
 4



**DIMENSION SCHEDULE**

PLUG SIZE	A	B	C	SPECIAL BOLTS SIZE & NO. REQ.
12"	1'-0"	3'-1"	1'-0"	3/4" 4
14"	1'-0"	3'-3"	1'-4"	3/4" 5
16"	1'-0"	3'-6"	1'-6"	3/4" 6
18"	1'-0"	3'-8"	1'-8"	3/4" 6
20"	1'-0"	3'-10"	2'-2"	3/4" 7
24"	1'-2"	4'-6"	2'-8"	3/4" 8
30"	1'-2"	5'-0"	3'-0"	1" 10

**NOTES:**

1. ALL CONCRETE SHALL BE MIX NO. 3
2. ALL BEARING SURFACES TO BE CARRIED TO UNDISTURBED EARTH.
3. ALL BACKFILL IN FRONT OF THE ANCHOR SHALL BE CAREFULLY COMPACTED.
4. ANCHOR DIMENSIONS SHOWN ARE MINIMUM. DIMENSIONS ARE BASED UPON SOIL BEARING PRESSURE OF 3000 P.S.F. AND WATER PRESSURE OF 150 P.S.I. WHERE PRESSURE EXCEEDS 150 P.S.I. OR WHERE SOIL BEARING PRESSURE IS LESS THAN 3000 P.S.F. SPECIAL ANCHOR DESIGN IS REQUIRED.
5. SPECIAL BOLTS ARE 24" INCHES LONG, THREADED 7" WITH 2" HOOK AND EQUIPPED WITH 2 STANDARD NUTS.

ANNE ARUNDEL COUNTY DEPARTMENT OF PUBLIC WORKS	APPROVED: <i>[Signature]</i> CHIEF ENGINEER <i>[Signature]</i> DESIGN ENGINEER DATE: 6/5/84	STANDARD WATER DETAILS ANCHOR FOR 12" AND LARGER PLUGS	REVISED 5/6/88 10/95 5

\* Limiting factors: (1) joint opening not to exceed 0.75 in.; (2) calking space at face of bell to be not less than 0.25 in. in width.

PIPE SIZE	DEFLECTION INCHES		MINIMUM RADIUS FEET	
	LENGTH		LENGTH	
	12 ft.	18 ft.	12 ft.	18 ft.
4	11.1 in.	16.7 in.	156 ft.	234 ft.
6	11.1	16.7	156	234
8	9.7	14.6	178	268
10	9.3	14.0	186	279
12	7.9	11.9	218	327
16	5.9	8.8	293	440
18	5.3	8.0	326	489
20	4.8	7.2	360	540
24	4.0	6.0	432	648

\* BELL AND SPIGOT PIPE

PIPE SIZE	DEFLECTION INCHES		MINIMUM RADIUS FEET	
	LENGTH		LENGTH	
	12 ft.	18 ft.	12 ft.	18 ft.
4	21 in.	31 in.	85 ft.	125 ft.
6	18	27	100	145
8	13	20	130	195
10	13	20	130	195
12	13	20	130	195
16	9	13.5	190	285
18	7.5	11	230	340
20	7.5	11	230	340
24	6	9	300	450

MECHANICAL JOINT PIPE

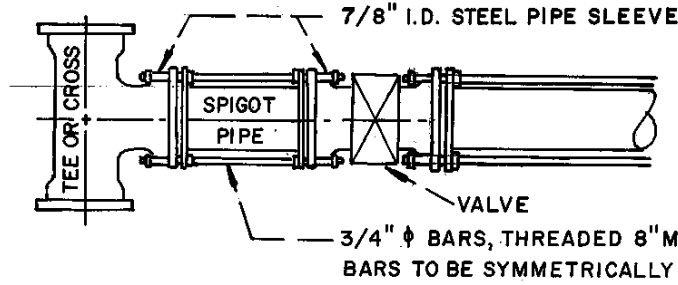
PIPE SIZE	DEFLECTION INCHES		MINIMUM RADIUS FEET	
	LENGTH		LENGTH	
	12 ft.	18 ft.	12 ft.	18 ft.
4	12 1/2 in.	19 in.	140 ft.	205 ft.
6	12 1/2	19	140	205
8	12 1/2	19	140	205
10	12 1/2	19	140	205
12	12 1/2	19	140	205
16	10	15	175	260
18	7	11	230	345
20	7	11	230	345
24	7	11	230	345

TYTON JOINT PIPE

ANNE ARUNDEL COUNTY DEPARTMENT OF PUBLIC WORKS	APPROVED: <i>[Signature]</i> CHIEF ENGINEER	STANDARD WATER DETAILS CURVATURE OF DUCTILE IRON PIPE WATER MAINS	REVISED
	DESIGN ENGINEER: <i>[Signature]</i> DATE: 6/5/84		5/6/88 <i>[Signature]</i>
			10 / 95 <i>[Signature]</i>
			W 6

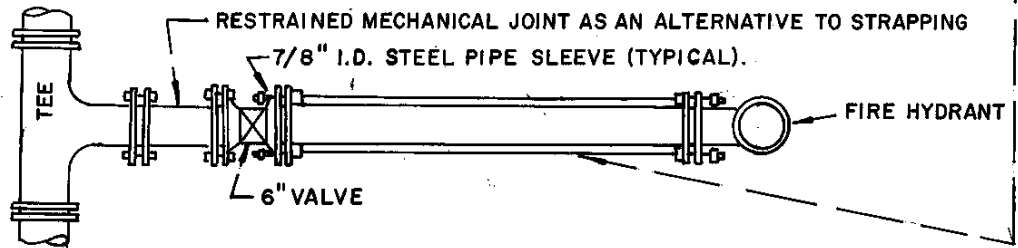
PIPE SIZE	MINIMUM RADIUS – FEET ( NO JOINT DEFLECTIONS ) 20 FT. LENGTH DR-14
4	100 FT.
6	144 FT.
8	189 FT.
10	231 FT.
12	275 FT.

ANNE ARUNDEL COUNTY DEPARTMENT OF PUBLIC WORKS	APPROVED	<b>STANDARD WATER DETAILS</b>  <b>CURVATURE OF                  POLYVINYL CHLORIDE PIPE                  WATER MAINS</b>	REVISED	$\frac{W}{7}$
	_____			
	CHIEF ENGINEER			
	DATE: _____			
DESIGN ENGINEER				



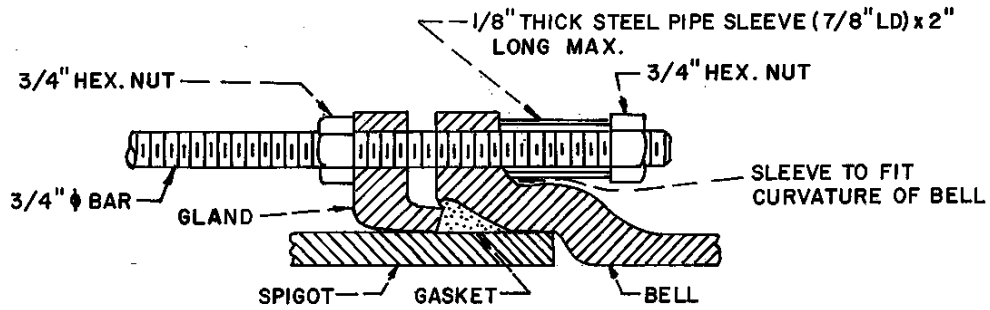
NOTE: IF VALVE AT END OF STUB USE MECHANICAL JOINT PLUG.

**VALVE STRAPPING**



**FIRE HYDRANT STRAPPING**

PLAN



**CROSS SECTION**

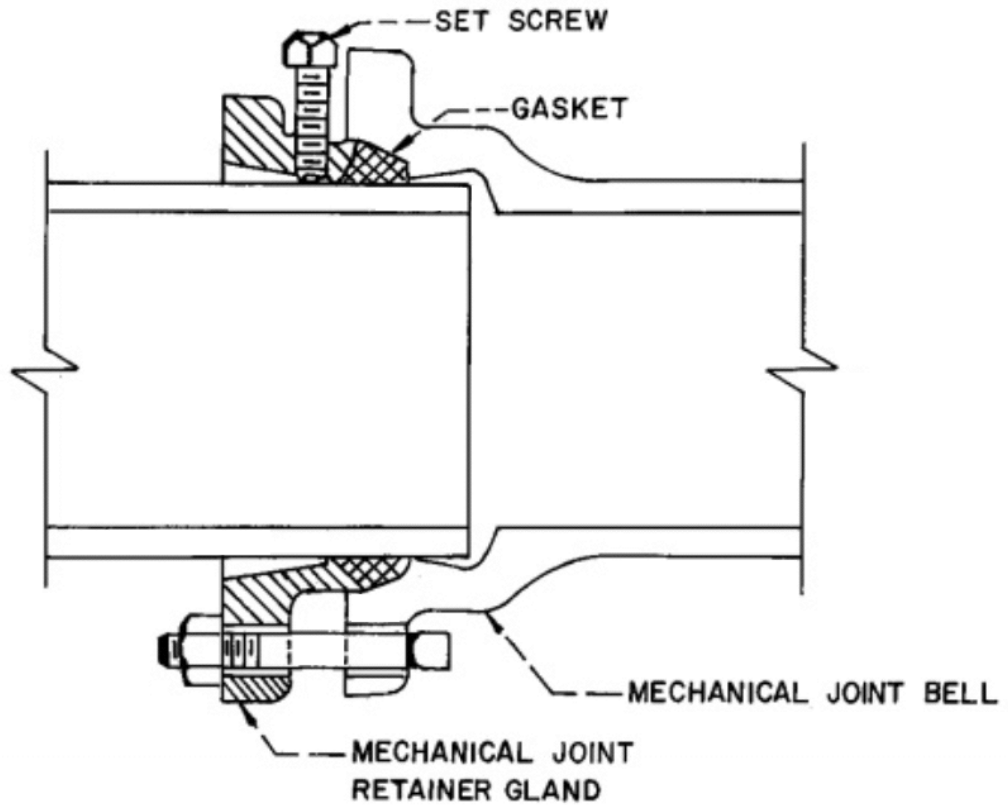
**SLEEVE AND BAR ASSEMBLY**

BRANCH SIZE	NUMBER OF 3/4" φ BARS REQUIRED
3" THRU 8"	2
10"	4
12"	6
16"	8
20"	12
24"	16
30"	20

NOTE:

1. USE MECHANICAL JOINT D.I. FITTINGS ONLY.
2. APPLY TWO COATS OF BITUMINOUS COATING TO ALL STEEL.
3. FIRE HYDRANT TEE AND/OR RESTRAINED MECHANICAL JOINTS MAY BE USED AS AN ALTERNATE TO STRAPPING.
4. FIRE HYDRANT SHALL ONLY BE STRAPPED IF CONCRETE BUTTRESS CANNOT BE INSTALLED.

ANNE ARUNDEL COUNTY DEPARTMENT OF PUBLIC WORKS	APPROVED: <i>[Signature]</i> CHIEF ENGINEER	STANDARD WATER DETAILS METHOD OF STRAPPING PIPE LINES	REVISED: <i>[Signature]</i> 10 / 95
	DESIGN ENGINEER: <i>[Signature]</i>		_____
	DATE: 5/6/88		_____
	_____		_____

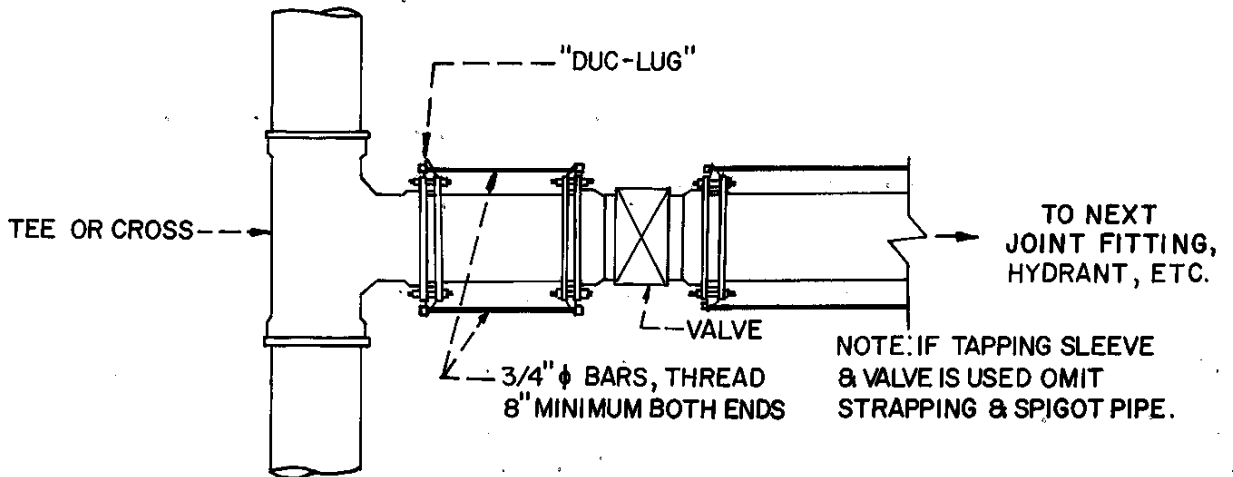


SIZE INCHES	NO. OF SET SCREWS	PRESSURE RATING IN PSI.
3"	4	300 PSI.
4"	4	300 PSI.
6"	6	300 PSI.
8"	9	200 PSI.
10"	16	200 PSI.
12"	16	200 PSI.
16"	24	200 PSI.
20"	28	200 PSI.
24"	32	150 PSI.
30"	40	150 PSI.

**NOTES**

1. ALL SET SCREWS ARE 5/8" SIZE WITH HARDENED CUPPED ENDS AND 5/8" SQUARE HEADS
2. SIZES 16" THROUGH 30" ARE FOR INSTALLATION ON DUCTILE IRON PIPE ONLY.
3. TIGHTEN SET SCREWS EVENLY TO 80 FOOT POUNDS ON 3"-12" GLANDS AND 65 FOOT POUNDS ON 16"-30" GLANDS.
4. MECHANICAL JOINT D.I. PIPE AND FITTINGS ONLY.
5. PRESSURE IN 3RD COLUMN IS TOTAL PRESSURE (OPERATING PLUS SURGE).

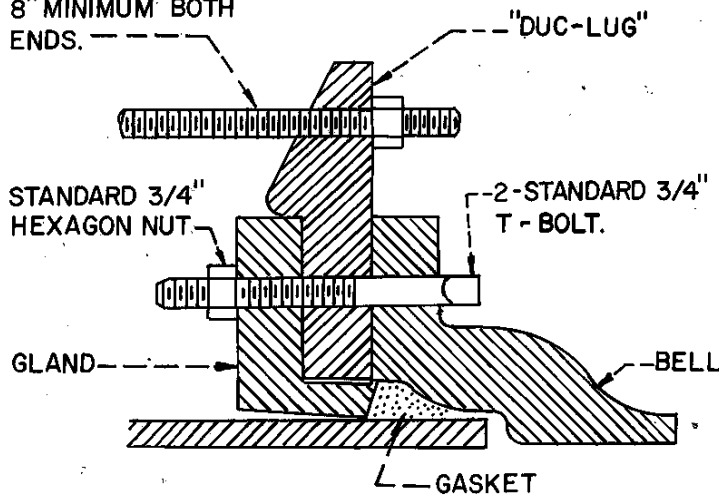
ANNE ARUNDEL COUNTY DEPARTMENT OF PUBLIC WORKS	APPROVED	<b>STANDARD WATER DETAILS</b>  <b>MECHANICAL JOINT RETAINER GLAND</b>	REVISED	$\frac{W}{9}$
	_____		_____	
	CHIEF ENGINEER		_____	
	_____		_____	
	DESIGN ENGINEER		_____	
DATE:				



NOTE: IF TAPPING SLEEVE & VALVE IS USED OMIT STRAPPING & SPIGOT PIPE.

PLAN

2-3/4"  $\phi$  BARS, THREAD 8" MINIMUM BOTH ENDS.



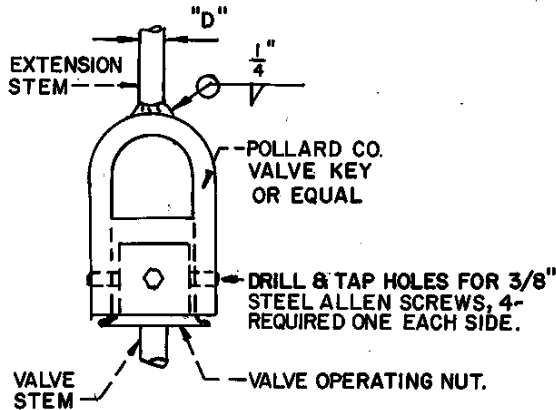
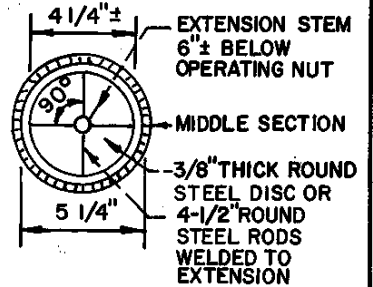
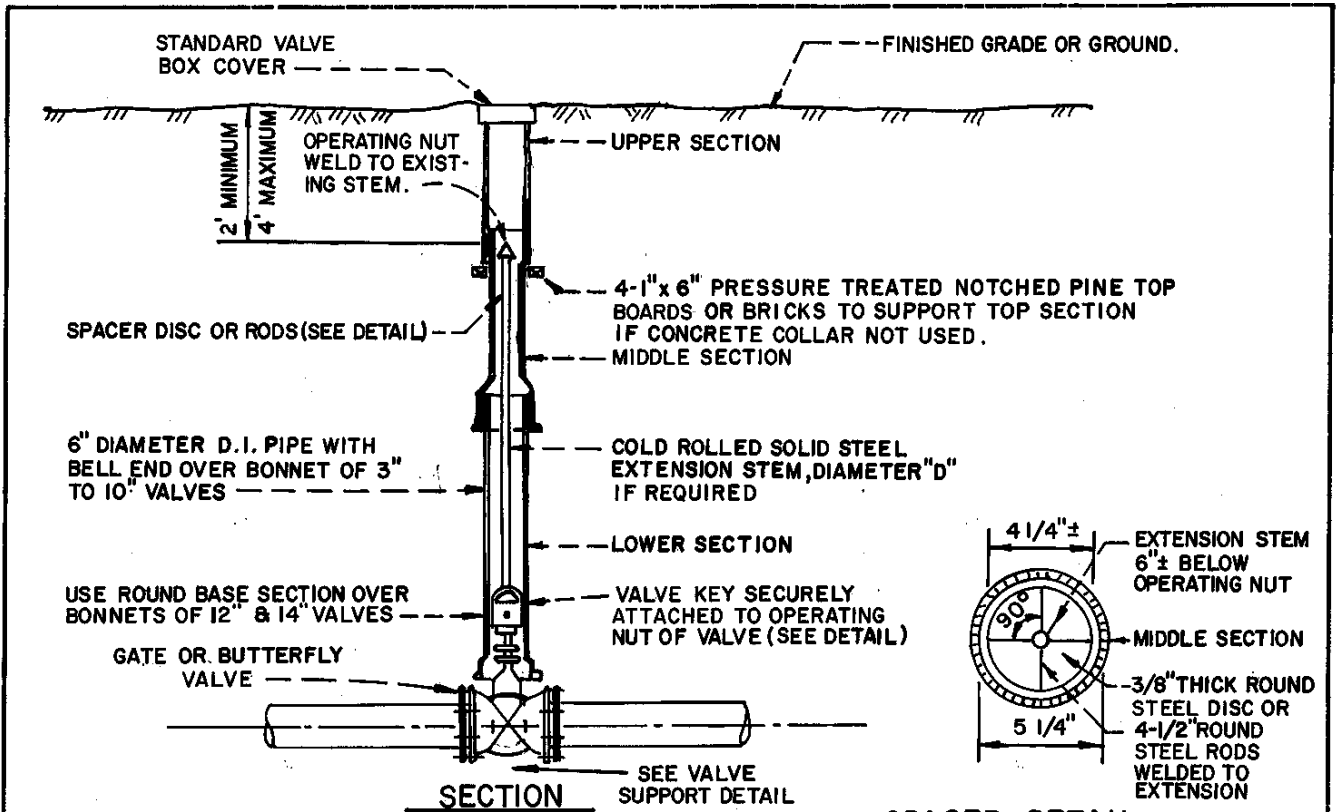
CROSS SECTION  
LUG ASSEMBLY

BRANCH SIZE	NUMBER OF 3/4" $\phi$ BARS AND BOLTS REQUIRED
3" THRU 8"	2
10"	4
12"	6
16"	8
20"	12
24"	16
30"	20

NOTE:

1. USE MECHANICAL JOINT D.I. FITTINGS ONLY.
2. APPLY TWO COATS OF BITUMINOUS COATING TO ALL STEEL.
3. FIRE HYDRANT TEE AND/OR RESTRAINED MECHANICAL JOINTS MAY BE USED AS AN ALTERNATE TO STRAPPING.
4. FIRE HYDRANT SHALL ONLY BE STRAPPED IF CONCRETE BUTTRESS CANNOT BE INSTALLED.

ANNE ARUNDEL COUNTY DEPARTMENT OF PUBLIC WORKS	APPROVED <i>[Signature]</i> CHIEF ENGINEER	STANDARD WATER DETAILS ALTERNATE METHOD OF STRAPPING WITH "DUC-LUGS"	REVISED 10 / 95 <i>[Signature]</i>
	DESIGN ENGINEER <i>[Signature]</i>		W 10
	DATE: 5/6/88		



**VALVE KEY DETAIL**

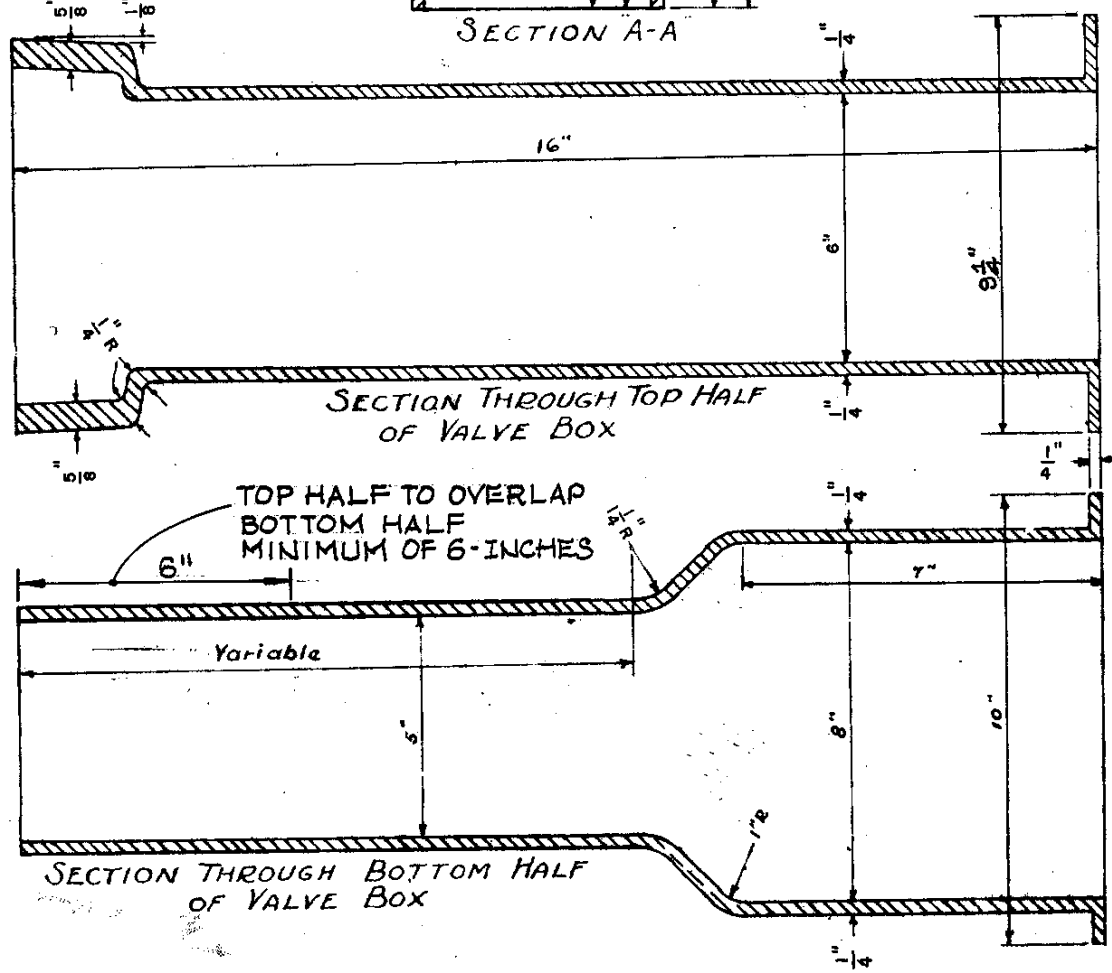
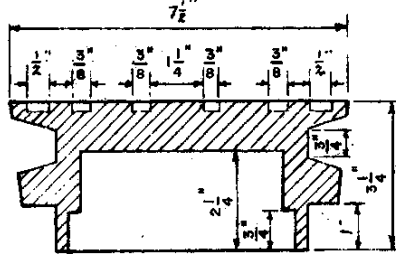
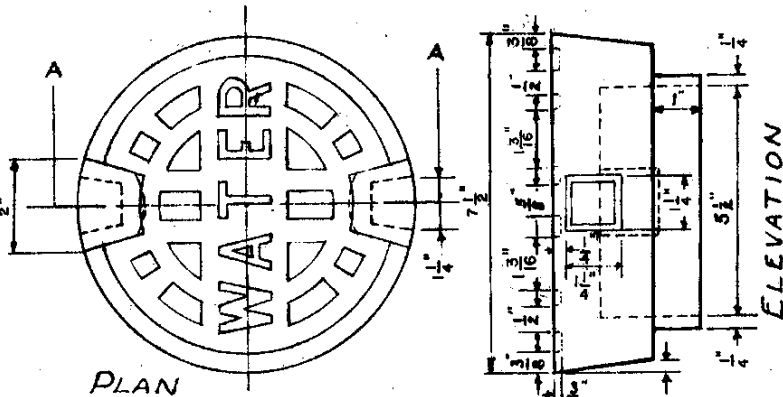
EXTENSION STEM DIAMETER "D"	VALVE SIZE				
	3"	4"	6"	8"	10"
	7/8"	7/8"	1"	1-1/8"	1-1/4"
	12"	14"	16"	20"	24"
	1-1/4"	1-3/8"	1-1/2"	1-3/4"	1-3/4"
	30"	36"	42"	48"	
	1-3/4"	1-3/4"	2"	2"	

1. SCREWS SECURING VALVE KEY TO VALVE NUT TO BE FLUSH WITH VALVE KEY.
2. EXTENSION STEM TO BE SECURELY WELDED TO VALVE KEY.
3. LENGTH OF STEM TO BE SUCH THAT OPERATING NUT WILL BE LOCATED AS PRESCRIBED ABOVE.
4. WELD 4- 1/2" ROUND STEEL RODS OR 3/8" THICK ROUND STEEL PLATE TO EXTENSION STEM TO INSURE OPERATING NUT IS CENTRALLY LOCATED WITHIN VALVE BOX.
5. APPLY 2- COATS OF BITUMINOUS COATING TO ALL STEEL.
6. THIS STANDARD DETAIL IS TO BE USED WHEN DISTANCE FROM TOP OF OPERATING NUT OF VALVE TO FINISHED GRADE OR GROUND EXCEEDS 4'-0".
7. VAULTS SHALL BE USED FOR ALL GATE VALVES LARGER THAN 12- INCHES.
8. ALL CONSTRUCTION TO BE PLUMB.

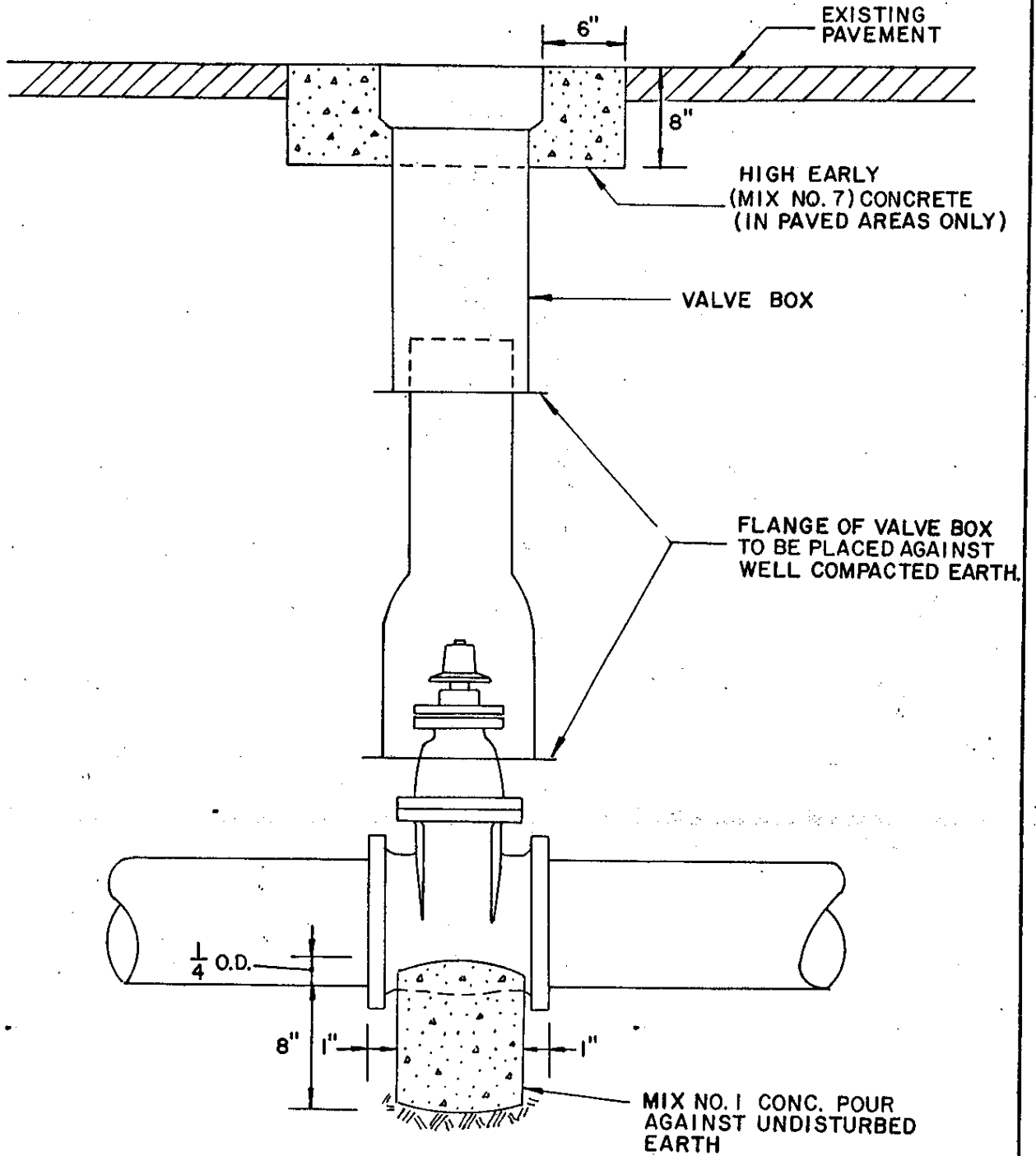
ANNE ARUNDEL COUNTY DEPARTMENT OF PUBLIC WORKS	APPROVED <i>[Signature]</i> CHIEF ENGINEER	STANDARD WATER DETAILS EXTENSION STEMS & VALVE BOXES FOR DEEP SETTINGS	REVISED 10 / 95
	<i>[Signature]</i> DESIGN ENGINEER		W
	DATE: 5/6/88		11
			J



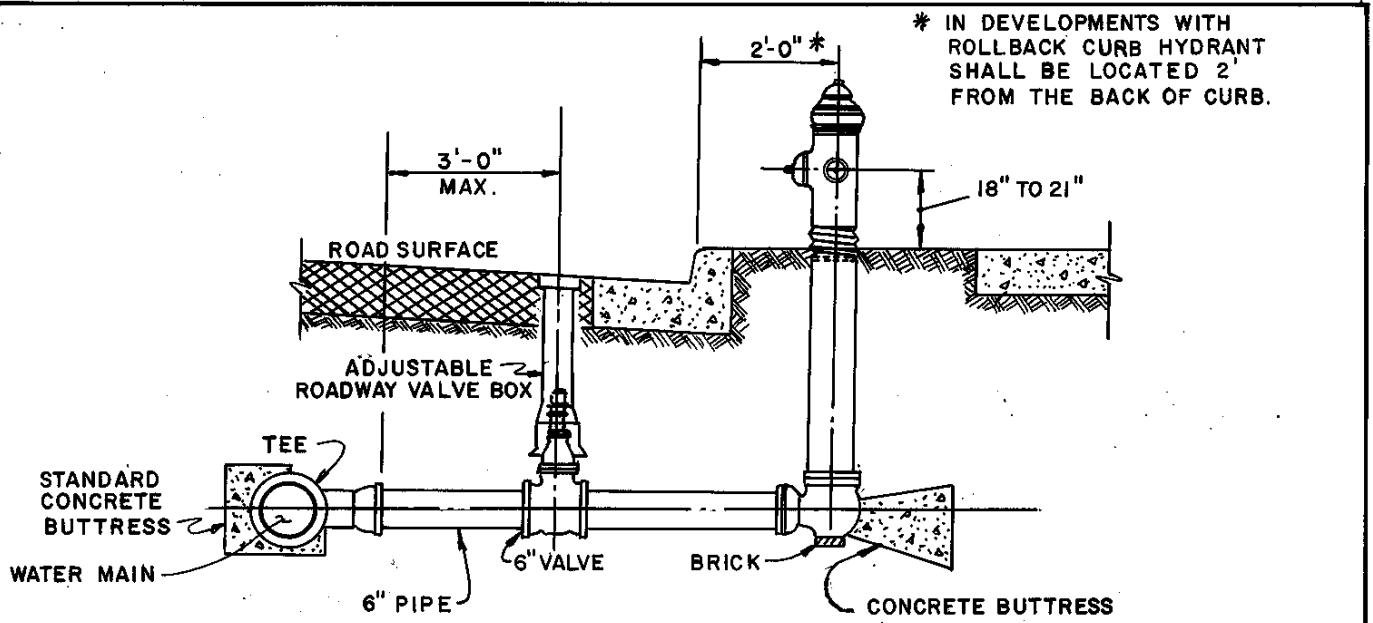
Boxes Adjustable 23" to 34"  
 Top Section - 16"  
 Bottom Section 18"  
 Boxes Adjustable 34" to 46"  
 Top Section - 16"  
 Bottom Section 30"  
 Min. wt. per box - 100 lbs.



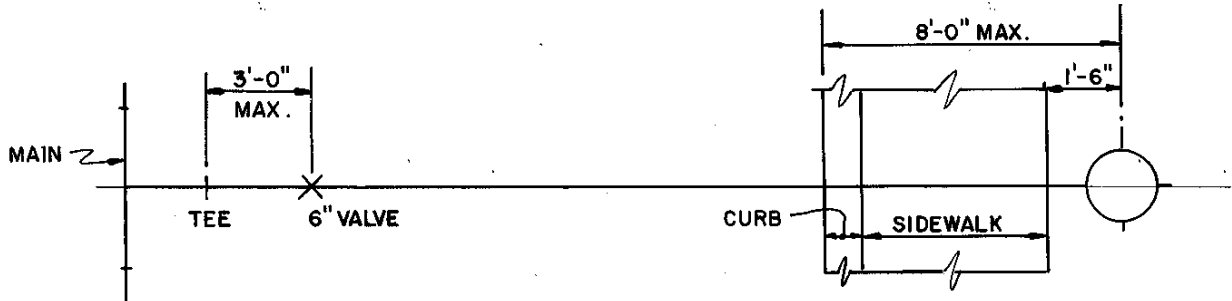
ANNE ARUNDEL COUNTY DEPARTMENT OF PUBLIC WORKS	APPROVED: <i>[Signature]</i> CHIEF ENGINEER	STANDARD WATER DETAILS STANDARD VALVE BOX AND COVER	REVISED
	DATE: 6/5/84		5/6/88 10 / 95 <i>[Signature]</i> W/12



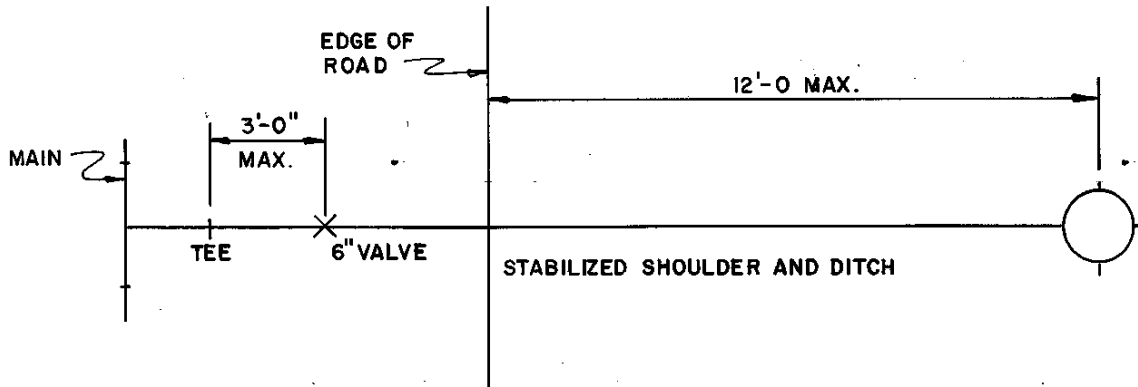
<p>ANNE ARUNDEL COUNTY DEPARTMENT OF PUBLIC WORKS</p>	<p>APPROVED <i>[Signature]</i> CHIEF ENGINEER <i>[Signature]</i> DESIGN ENGINEER DATE: 5/6/88</p>	<p>STANDARD WATER DETAILS CONCRETE COLLAR FOR VALVE BOX AND VALVE SUPPORT</p>	<p>REVISED 10 / 95 <i>[Signature]</i> W 13</p>
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INSTALLATION IN NEW DEVELOPMENT WITH CURB AND GUTTER

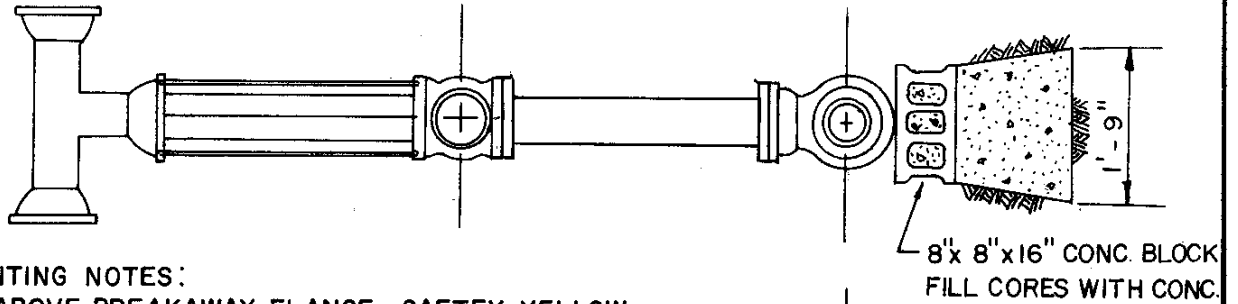


INSTALLATION IN EXISTING STREETS SIDEWALK ADJACENT TO CURB

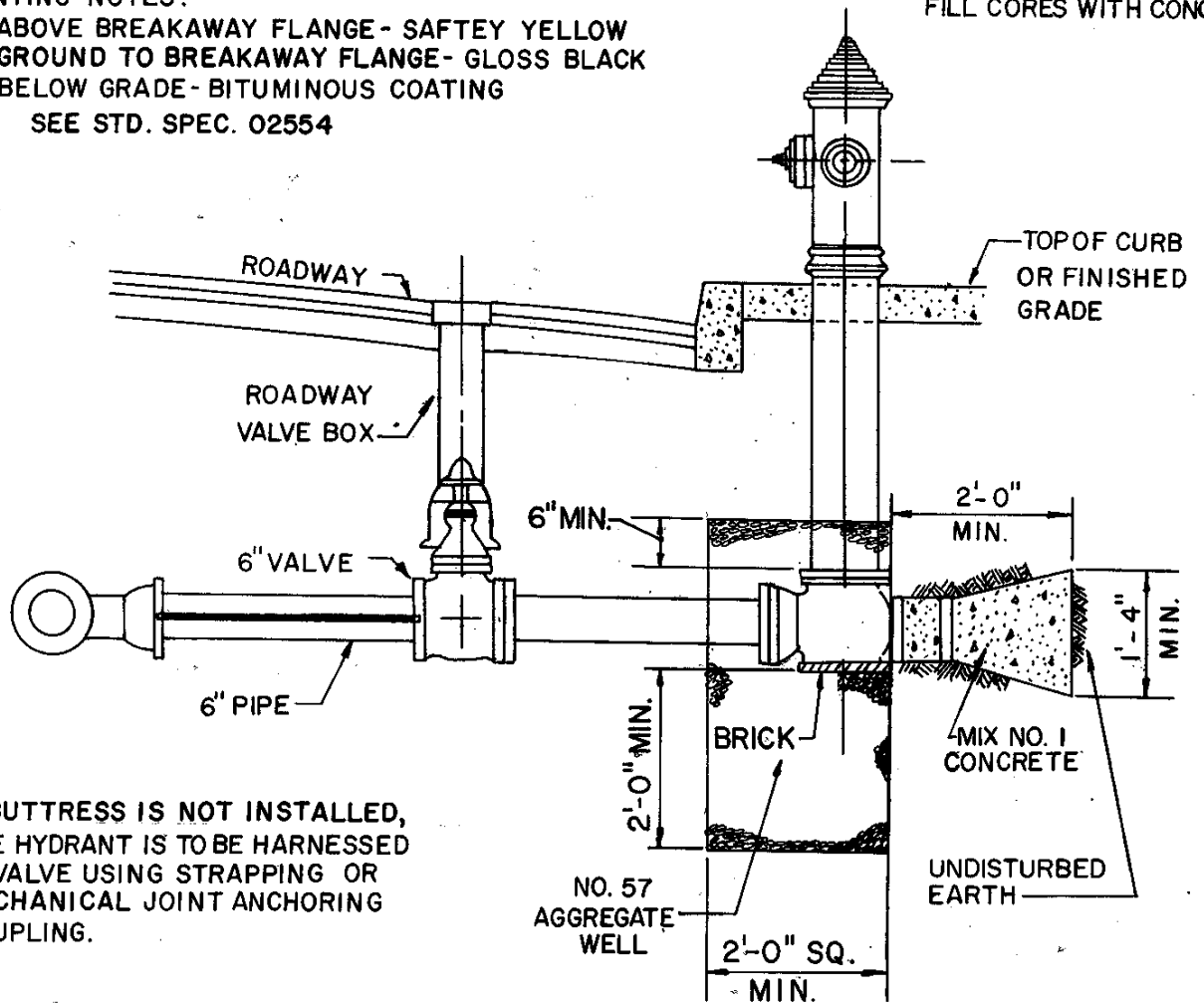


INSTALLATION IN STREETS WITHOUT CURB AND GUTTER

ANNE ARUNDEL COUNTY DEPARTMENT OF PUBLIC WORKS	APPROVED: <i>[Signature]</i> CHIEF ENGINEER	STANDARD WATER DETAILS FIRE HYDRANT SETTINGS	REVISED
	DESIGN ENGINEER: <i>[Signature]</i>		5/6/88
	DATE: 6/5/84		10 / 95
			14

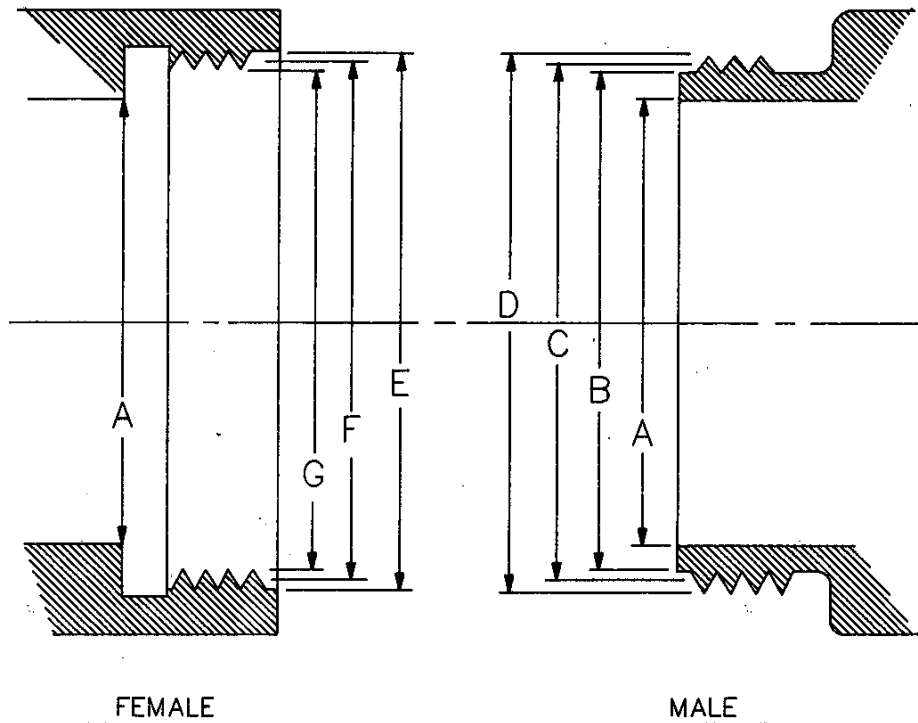


**PAINTING NOTES:**  
 ABOVE BREAKAWAY FLANGE - SAFETY YELLOW  
 GROUND TO BREAKAWAY FLANGE - GLOSS BLACK  
 BELOW GRADE - BITUMINOUS COATING  
 SEE STD. SPEC. 02554



IF BUTTRESS IS NOT INSTALLED,  
 FIRE HYDRANT IS TO BE HARNESSSED  
 TO VALVE USING STRAPPING OR  
 MECHANICAL JOINT ANCHORING  
 COUPLING.

ANNE ARUNDEL COUNTY DEPARTMENT OF PUBLIC WORKS	APPROVED: <i>[Signature]</i> CHIEF ENGINEER	STANDARD WATER DETAILS STANDARD INSTALLATION OF FIRE HYDRANTS.	REVISED
	DATE: 6/15/84		5/6/88
			10 / 95
			W 15



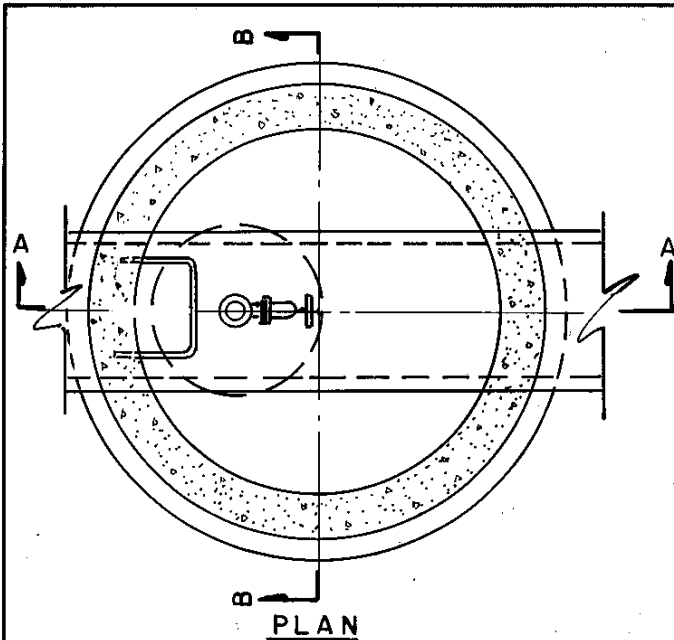
A	E	F	G
COUPLING I.D.	MAJOR DIA.	PITCH DIA.	MINOR DIA.
2 1/2" (7.5 T.P.I.)	3.0836 (MIN.)	<u>3.0130</u> 2.9970	<u>2.9424</u> 2.9104
4 1/2" (4 T.P.I.)	<u>5.546</u> 5.536	<u>5.325</u> 5.320	<u>5.113</u> 5.103

A	B	C	D
COUPLING I.D.	MINOR DIA.	PITCH DIA.	MAJOR DIA.
2 1/2" (7.5 T.P.I.)	2.8954 (MAX.)	<u>2.9820</u> 2.9660	<u>3.0686</u> 3.0366
4 1/2" (4 T.P.I.)	<u>5.044</u> 5.034	<u>5.260</u> 5.255	<u>5.477</u> 5.467

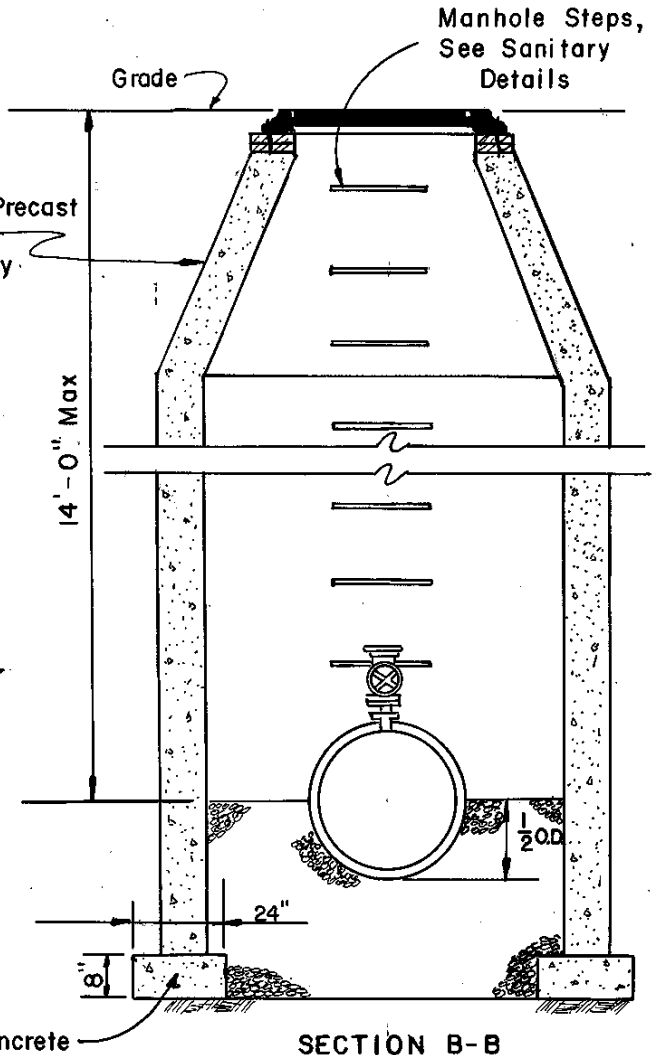
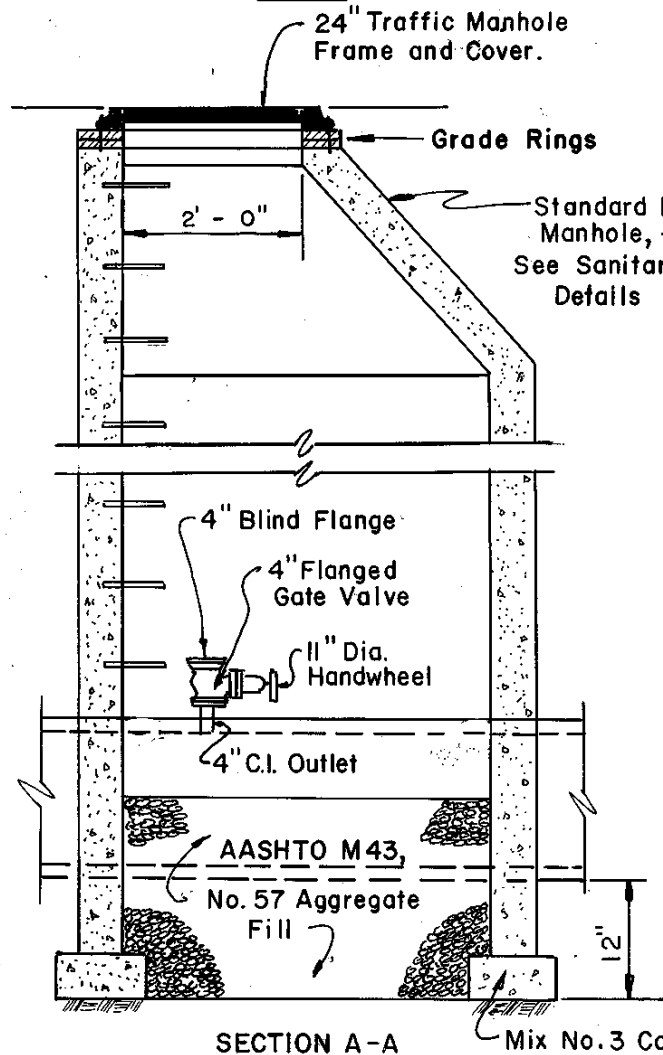
NOTE: 2 1/2" HYDRANT CONNECTION- NATIONAL STANDARD FIRE-HOSE COUPLING SCREW THREAD. (DIMENSIONS SHOWN ABOVE).

4 1/2" HYDRANT CONNECTION- ANNE ARUNDEL COUNTY, MD. 4 1/2" THREAD SPECIFICATION. (DIMENSIONS SHOWN ABOVE).

ANNE ARUNDEL COUNTY DEPARTMENT OF PUBLIC WORKS	APPROVED: <i>B. White</i> CHIEF ENGINEER	FIRE HYDRANT THREAD DETAILS	REVISED <i>W</i> 10 / 95
	<i>R.J. Wilcox</i> DESIGN ENGINEER		15 A
	DATE: 4-6-89		



NOTE: 24" Traffic Frame and Cover, Grade Rings, and installation to be same as shown on Sanitary Details, except that Cover to be lettered "Water".

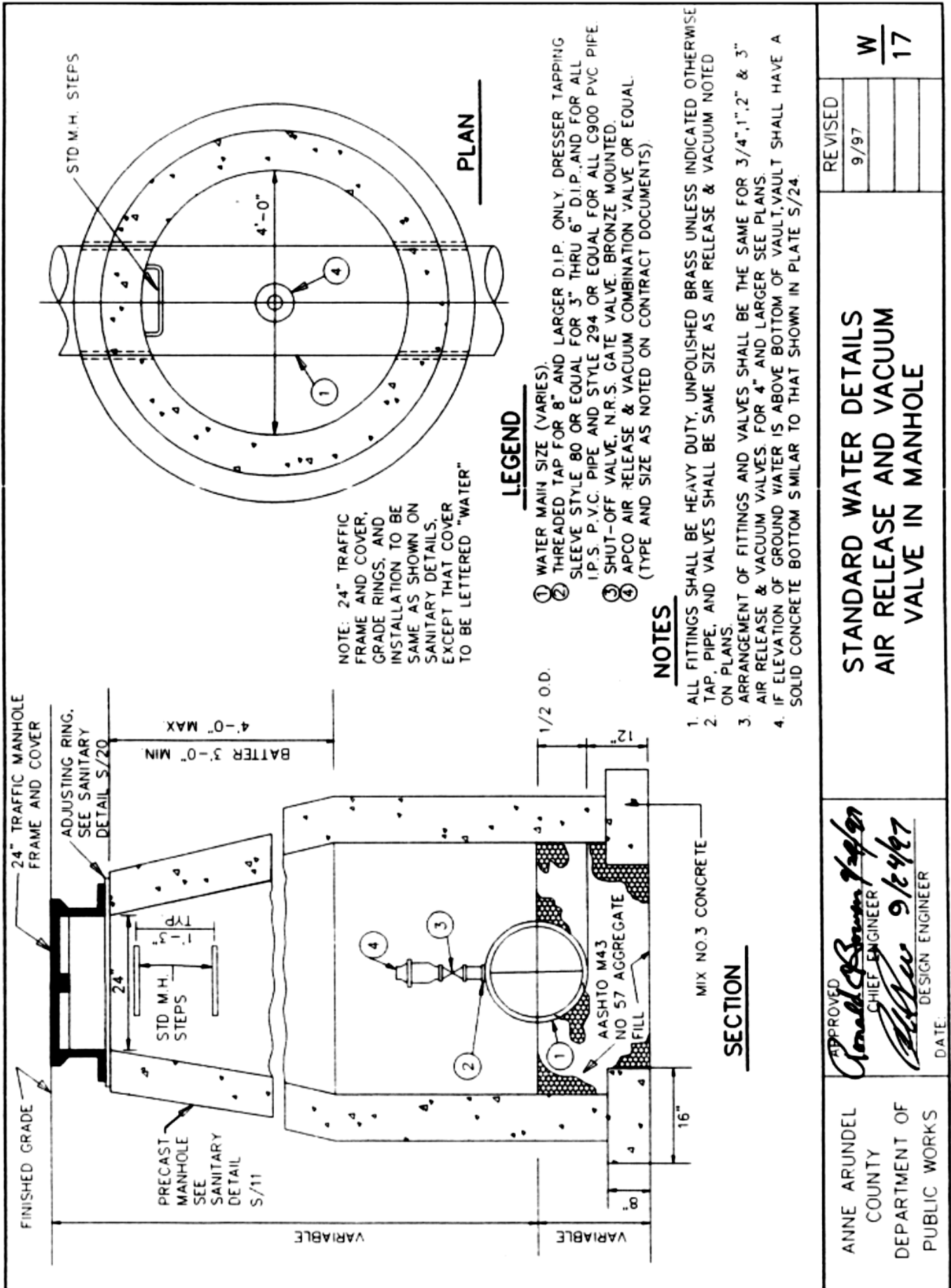


ANNE ARUNDEL COUNTY  
DEPARTMENT OF PUBLIC WORKS

APPROVED: *[Signature]*  
CHIEF ENGINEER  
*[Signature]*  
DESIGN ENGINEER  
DATE: 6/5/84

STANDARD WATER DETAILS  
DEWATERING VALVE

REVISED	
5/6/88	<i>[Signature]</i>
6/17/92	<i>[Signature]</i>
10 / 95	<i>[Signature]</i>



NOTE: 24" TRAFFIC FRAME AND COVER, GRADE RINGS, AND INSTALLATION TO BE SAME AS SHOWN ON SANITARY DETAILS, EXCEPT THAT COVER TO BE LETTERED "WATER"

**LEGEND**

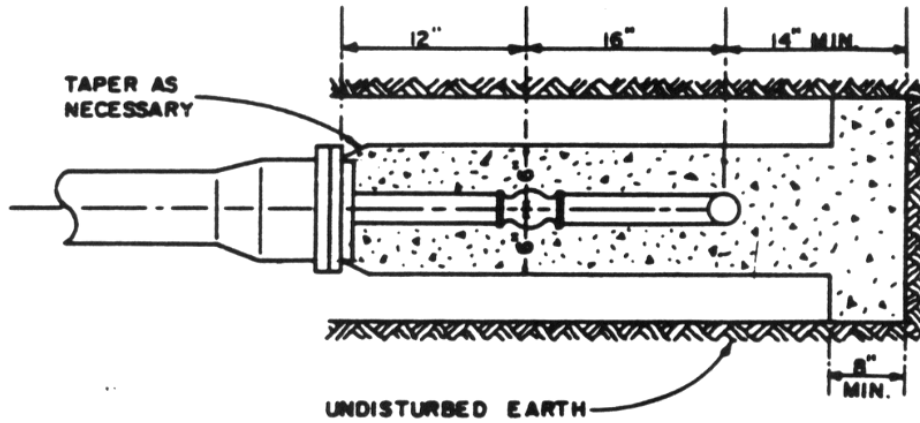
- ① WATER MAIN SIZE (VARIES).
- ② THREADED TAP FOR 8" AND LARGER D.I.P. ONLY. DRESSER TAPPING SLEEVE STYLE 80 OR EQUAL FOR 3" THRU 6" D.I.P., AND FOR ALL I.P.S. P.V.C. PIPE AND STYLE 294 OR EQUAL FOR ALL C900 PVC PIPE.
- ③ SHUT-OFF VALVE, N.R.S. GATE VALVE. BRONZE MOUNTED.
- ④ APCO AIR RELEASE & VACUUM COMBINATION VALVE OR EQUAL. (TYPE AND SIZE AS NOTED ON CONTRACT DOCUMENTS)

**NOTES**

- 1. ALL FITTINGS SHALL BE HEAVY DUTY, UNPOLISHED BRASS UNLESS INDICATED OTHERWISE
- 2. TAP, PIPE, AND VALVES SHALL BE SAME SIZE AS AIR RELEASE & VACUUM NOTED ON PLANS.
- 3. ARRANGEMENT OF FITTINGS AND VALVES SHALL BE THE SAME FOR 3/4", 1", 2" & 3" AIR RELEASE & VACUUM VALVES. FOR 4" AND LARGER SEE PLANS.
- 4. IF ELEVATION OF GROUND WATER IS ABOVE BOTTOM OF VAULT, VAULT SHALL HAVE A SOLID CONCRETE BOTTOM SIMILAR TO THAT SHOWN IN PLATE S/24.

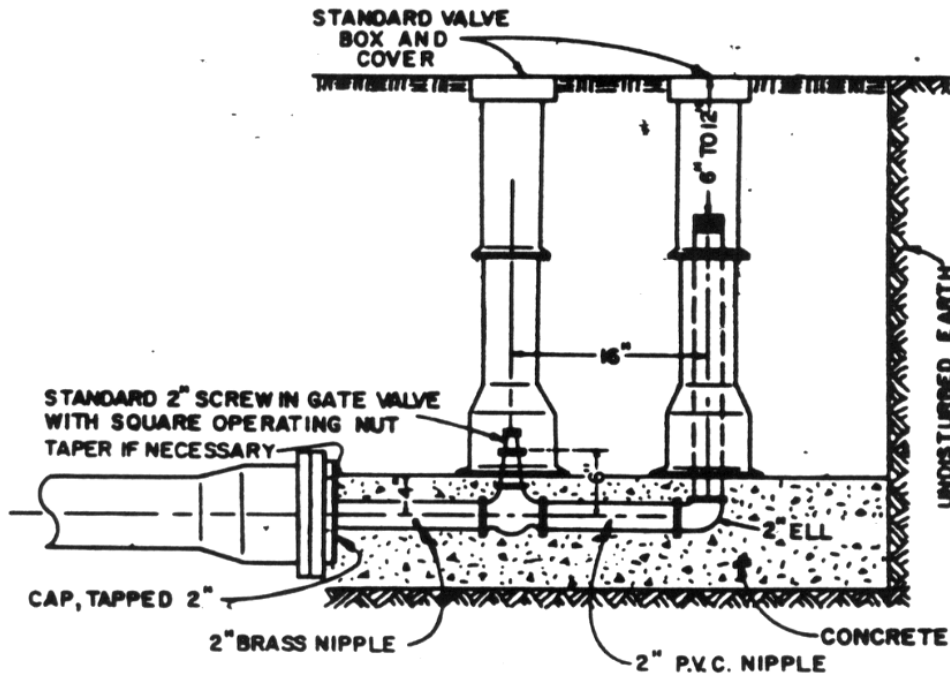
**SECTION**

ANNE ARUNDEL COUNTY DEPARTMENT OF PUBLIC WORKS	APPROVED	REVISION
	<i>Ronald Brown</i> CHIEF ENGINEER	9/97
	DATE	
	<i>W</i>	<i>17</i>
<b>STANDARD WATER DETAILS AIR RELEASE AND VACUUM VALVE IN MANHOLE</b>		



**NOTES:**

1. ALL CONCRETE SHALL BE MIX NO. 1
2. A FIRE HYDRANT SHALL BE USED FOR A BLOW-OFF ON DEAD END MAINS 6" AND LARGER.



**ANNE ARUNDEL COUNTY**

**DEPARTMENT OF PUBLIC WORKS**

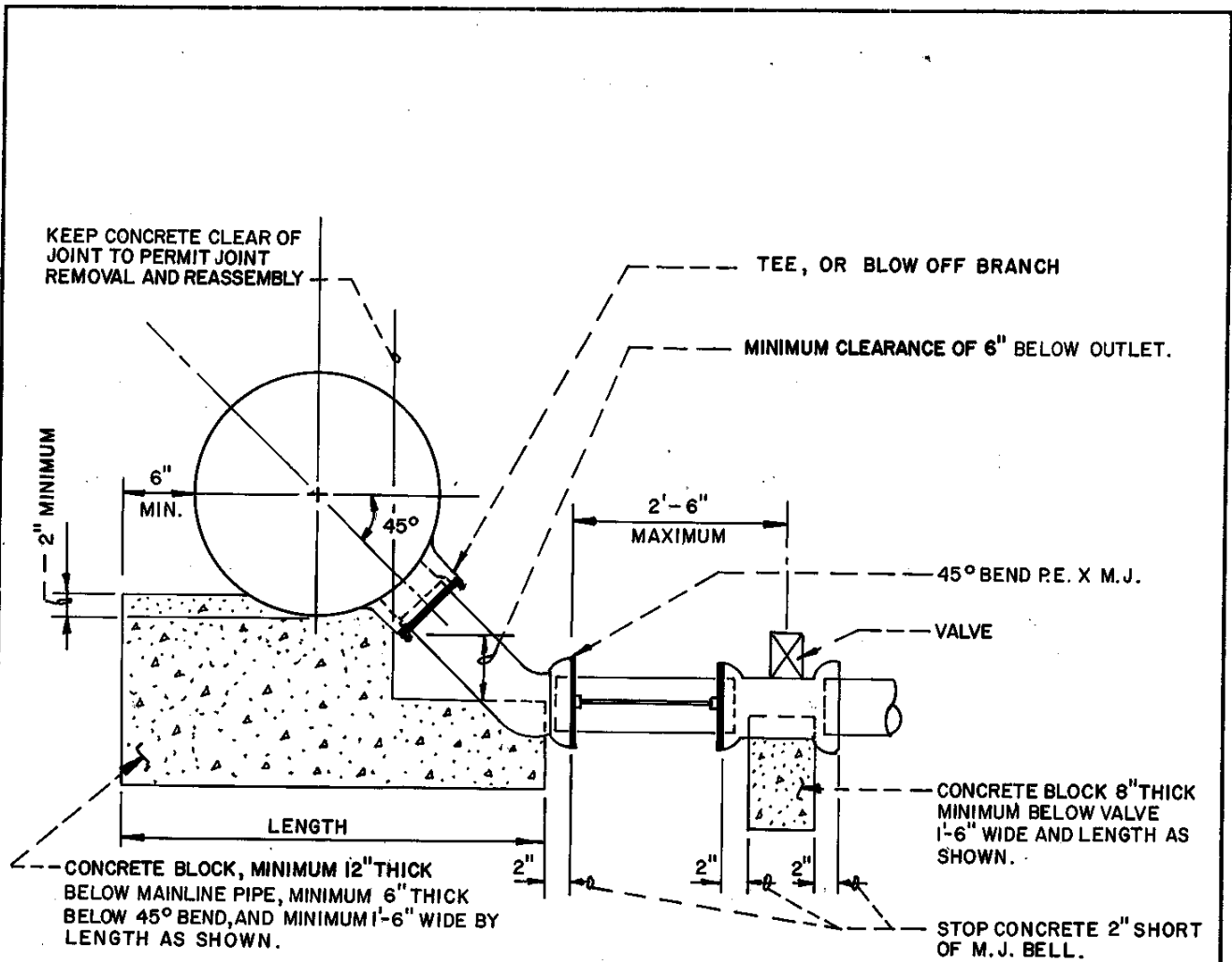
APPROVED: *[Signature]*  
 CHIEF ENGINEER  
*[Signature]*  
 DESIGN ENGINEER  
 DATE: 6/5/84

STANDARD WATER DETAILS  
 2" BLOW-OFF ASSEMBLY  
 FOR 4" MAINS

REVISED	
11-9-84	
5/6/88	<i>[Signature]</i>
10 / 95	<i>[Signature]</i>

W  
18



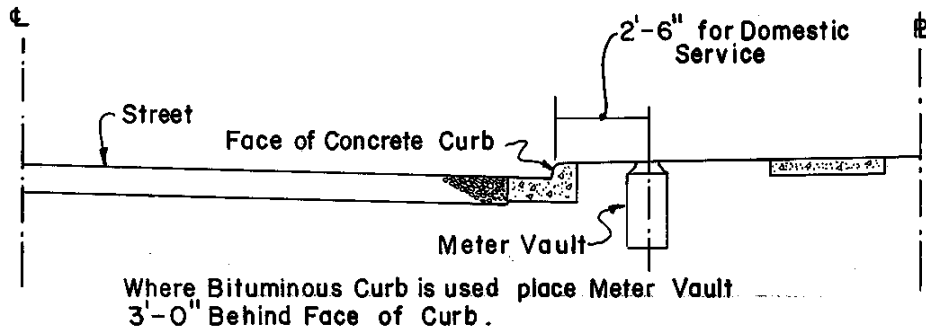


NOTES:

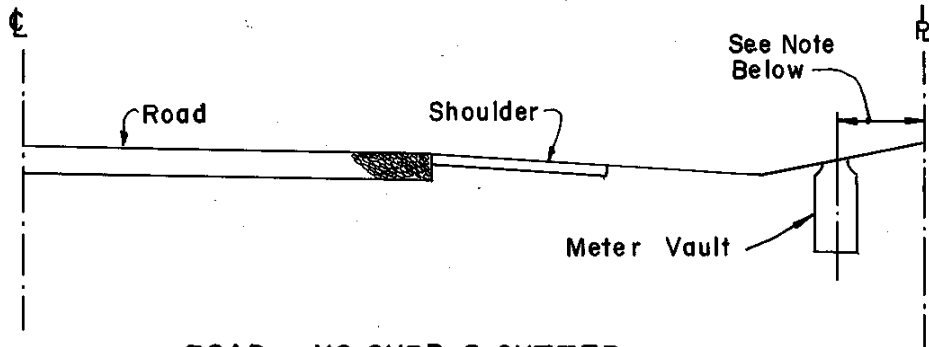
1. DO NOT ATTACH PIPE OR FITTINGS TO TEE UNTIL MAINLINE PIPE IS IN TRENCH.
2. SUPPORT ALL PIPING IMMEDIATELY AFTER INSTALLATION TO MINIMIZE LOADS TRANSMITTED TO FITTING.
3. PROVIDE RETAINER GLAND BETWEEN TEE AND 45° BEND, AND PROVIDE STRAPS OR RETAINER GLANDS BETWEEN 45° BEND AND VALVE. CONTRACTOR MAY AT HIS OPTION USE ANCHOR COUPLINGS BETWEEN 45° BEND AND VALVE.
4. ALL CONCRETE TO BE MIX NO. 1 AND BEAR ON FIRM SUBGRADE.
5. USE MECHANICAL JOINT FITTING ONLY.
6. APPLY TWO COATS OF BITUMINOUS COATING TO ALL STEEL.

ANNE ARUNDEL COUNTY DEPARTMENT OF PUBLIC WORKS	APPROVED: <i>[Signature]</i> CHIEF ENGINEER	STANDARD WATER DETAILS DEWATERING BLOWOFF	REVISED
	<i>[Signature]</i> DESIGN ENGINEER DATE: 5/6/88		5/6/88 10 9 19

In Developments with Rollback Curb, Meter shall be 2'-6" from back of curb.



**STREET - CURB & GUTTER**

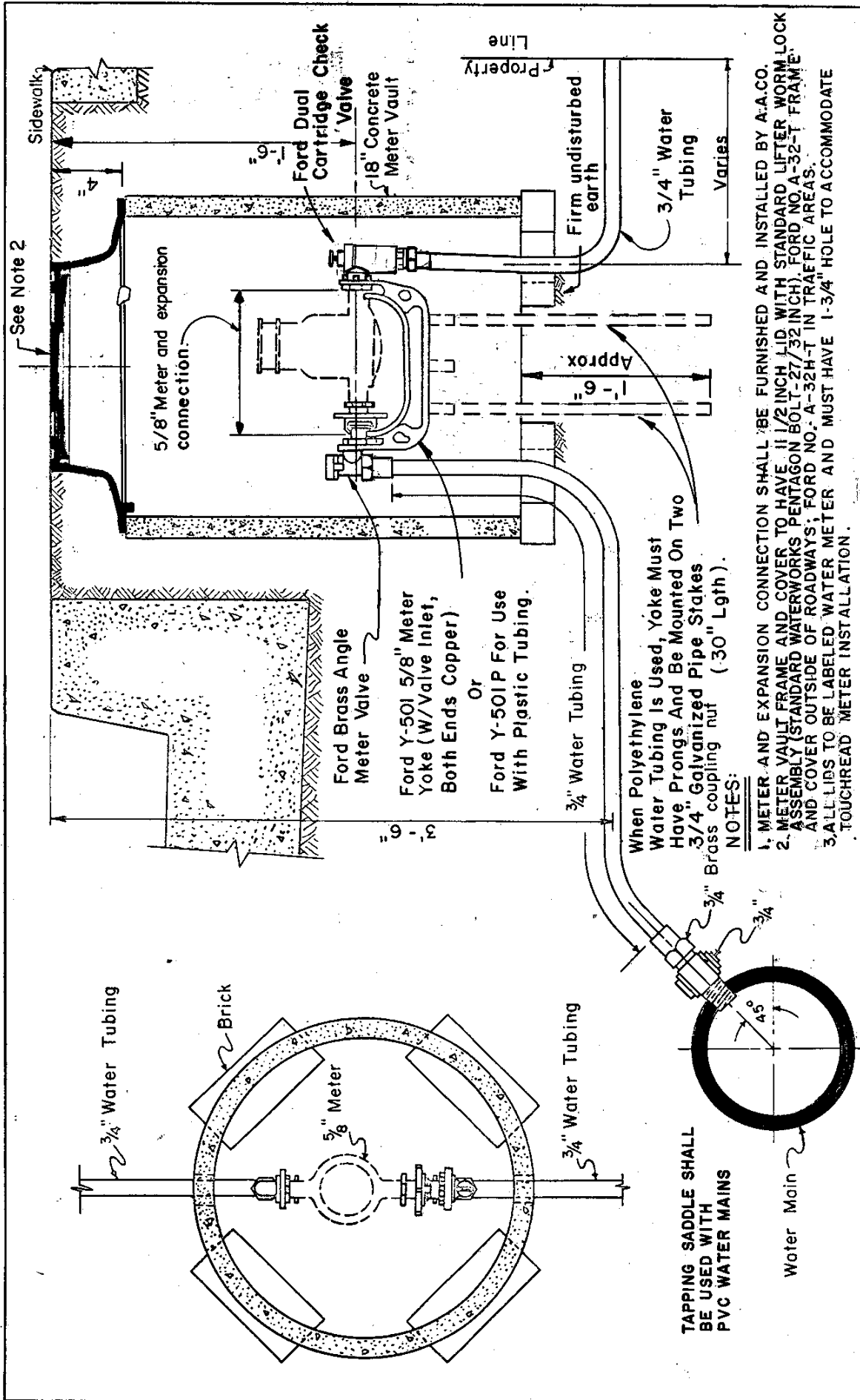


**ROAD - NO CURB & GUTTER**

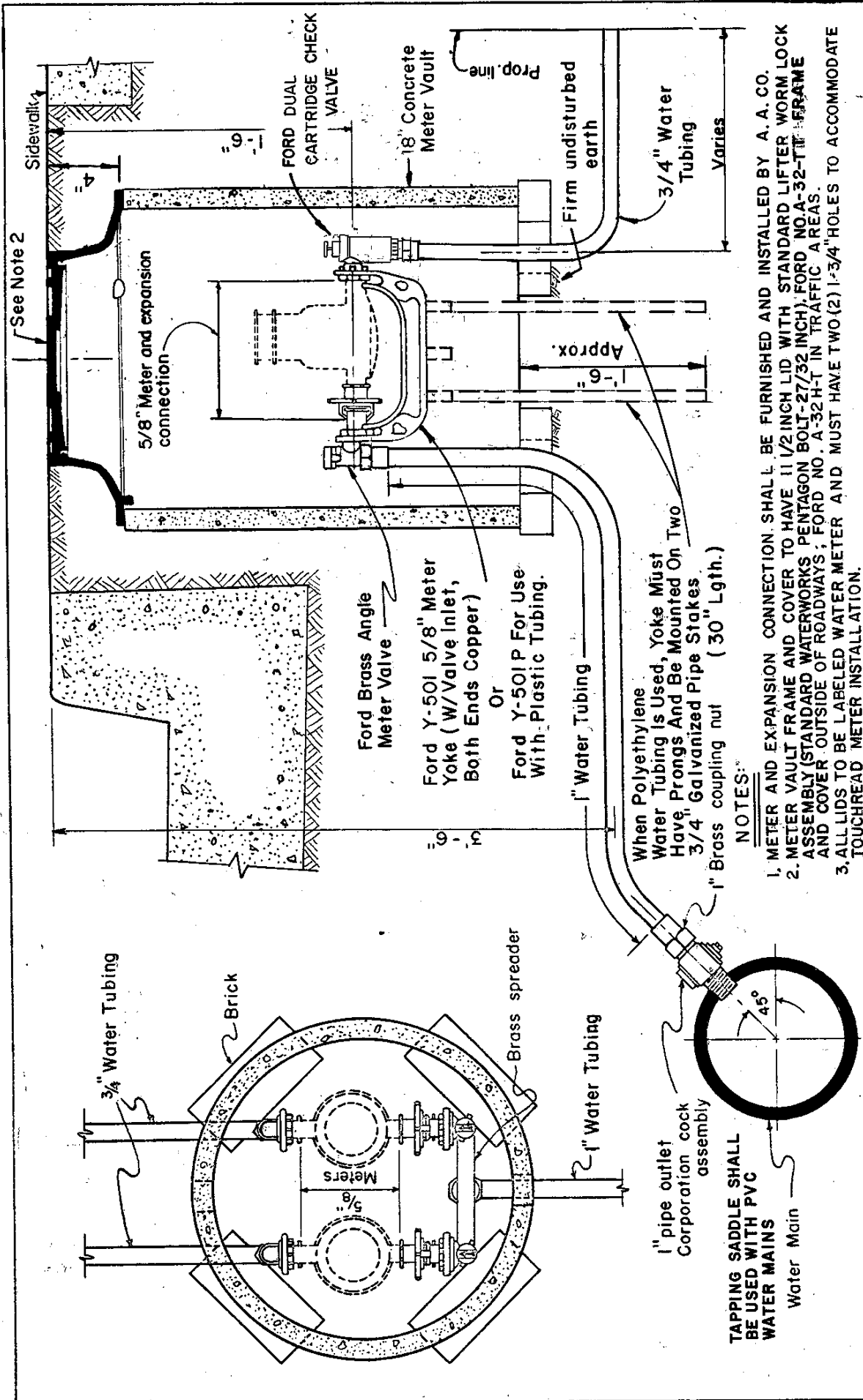
Note: Meter Vault shall be set as close as practicable to the R/W Line with the following restrictions:

1. Vault shall be contained entirely within the Road R/W.
2. Vault shall not be in position such that it is in the invert of side drainage ditch.

ANNE ARUNDEL COUNTY DEPARTMENT OF PUBLIC WORKS	APPROVER: <i>[Signature]</i> CHIEF ENGINEER	STANDARD WATER DETAILS WATER METER LOCATION	REVISED
	DESIGN ENGINEER: <i>[Signature]</i>		5/6/89
	DATE: 6/5/04		10 / 95
			20



ANNE ARUNDEL COUNTY DEPARTMENT OF PUBLIC WORKS	APPROVED <i>Ronald C. Bowen</i> CHIEF ENGINEER	STANDARD WATER DETAILS STANDARD INSTALLATION 3/4" METERED DOMESTIC SERVICE (SINGLE SETTING)	REVISED 7/98
	DESIGN ENGINEER DATE 12/7/95	W 21	

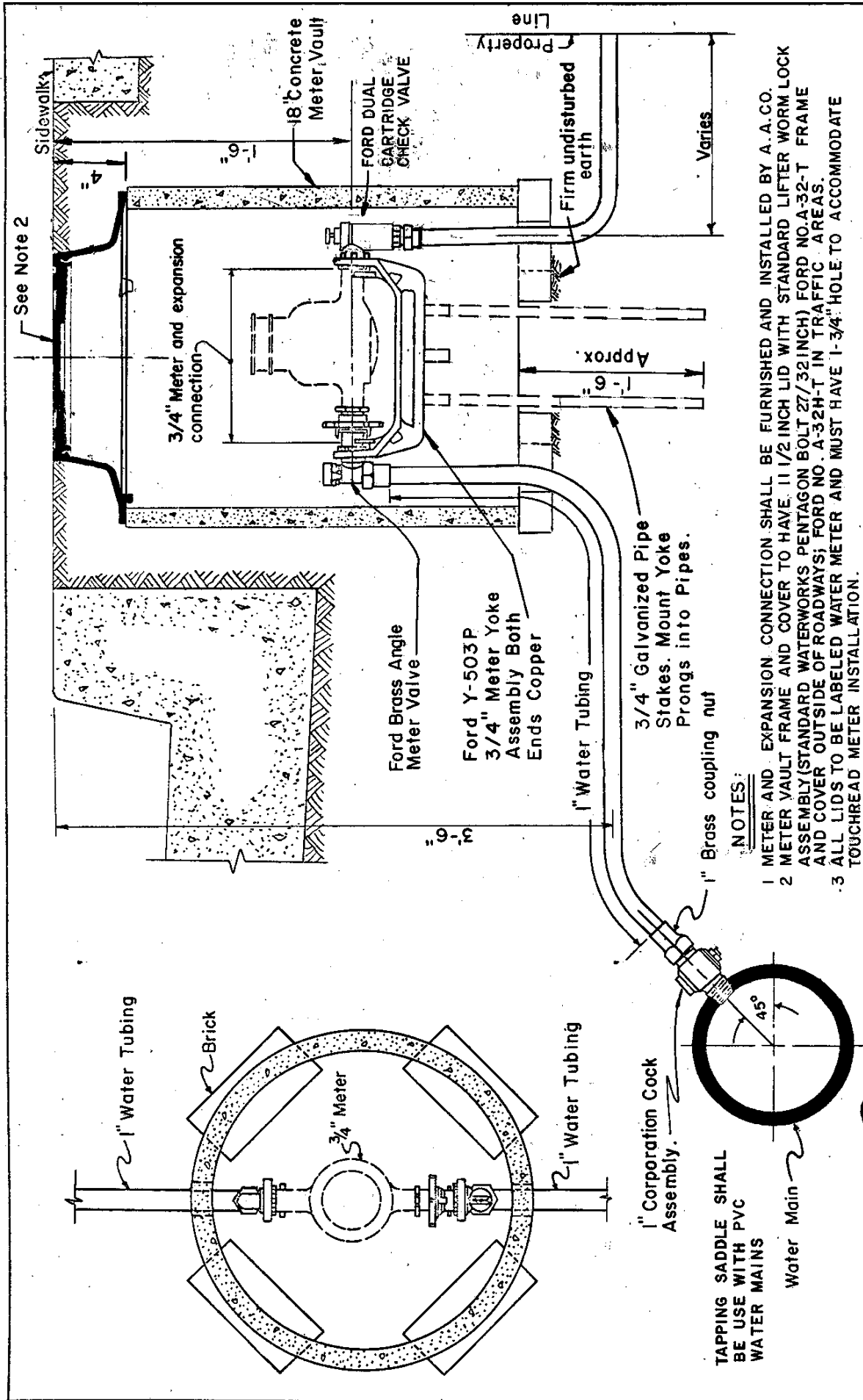


REVISED	W	22
7/96		

STANDARD WATER DETAILS  
**STANDARD INSTALLATION 3/4" METERED DOMESTIC SERVICE (TWIN SETTING)**

APPROVED  
*[Signature]*  
 CHIEF ENGINEER  
 DESIGN ENGINEER  
*[Signature]*  
 DATE 12/7/95

ANNE ARUNDEL COUNTY DEPARTMENT OF PUBLIC WORKS



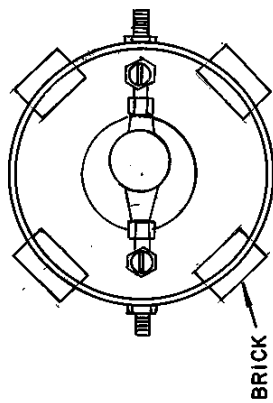
- NOTES:**
- 1 METER AND EXPANSION CONNECTION SHALL BE FURNISHED AND INSTALLED BY A. A. CO.
  - 2 METER VAULT FRAME AND COVER TO HAVE 1 1/2 INCH LID WITH STANDARD LIFTER WORM LOCK ASSEMBLY (STANDARD WATERWORKS PENTAGON BOLT 27/32 INCH) FORD NO. A-32-T FRAME AND COVER OUTSIDE OF ROADWAYS; FORD NO. A-32H-T IN TRAFFIC AREAS.
  - 3 ALL LIDS TO BE LABELED WATER METER AND MUST HAVE 1-3/4" HOLE TO ACCOMMODATE TOUCHREAD METER INSTALLATION.

REVISED	5/6/88	W
	6/15/90	
	10 / 91	23
	7/96	

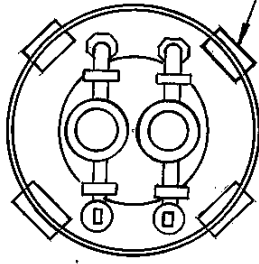
STANDARD WATER DETAILS  
 STANDARD INSTALLATION 1"  
 METERED DOMESTIC SERVICE

APPROVED: *[Signature]*  
 CHIEF ENGINEER  
 DESIGN ENGINEER  
 DATE: 6/5/84

ANNE ARUNDEL  
 COUNTY  
 DEPARTMENT OF  
 PUBLIC WORKS



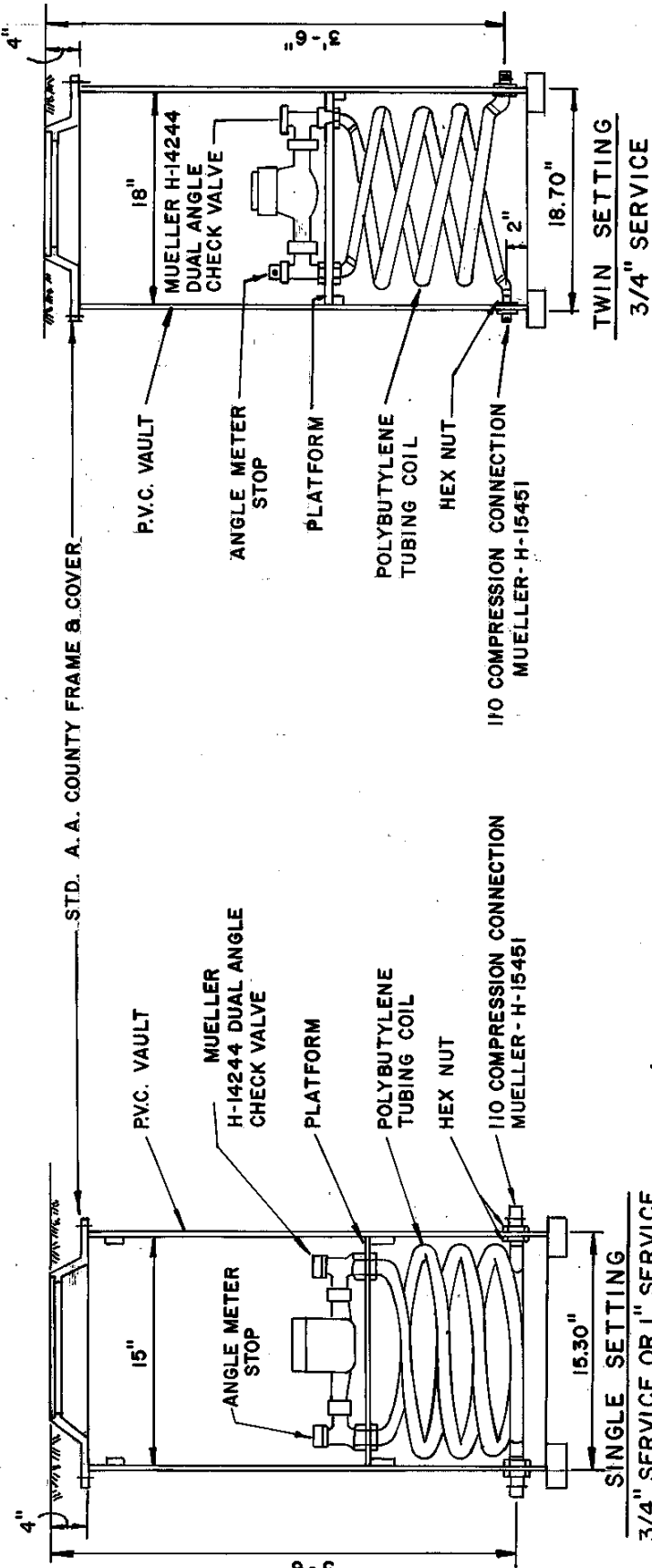
BRICK



BRICK

NOTES:

1. FOR USE IN HIGH GROUNDWATER AREAS ONLY.
2. VAULT SHALL BE SUPPORTED BY BRICKS PLACED ON FIRM UNDISTURBED EARTH.
3. USE STANDARD A.A.CO. FRAMES & COVERS.
4. FOR METER SIZES, FRAME & COVER DETAILS AND CONNECTION TO MAIN DETAILS. SEE APPROPRIATE DETAILS.



STD. A.A. COUNTY FRAME & COVER

P.V.C. VAULT

MUELLER H-14244 DUAL ANGLE CHECK VALVE

PLATFORM

POLYBUTYLENE TUBING COIL

HEX NUT

110 COMPRESSION CONNECTION MUELLER-H-15451

P.V.C. VAULT

ANGLE METER STOP

PLATFORM

POLYBUTYLENE TUBING COIL

HEX NUT

110 COMPRESSION CONNECTION MUELLER-H-15451

SINGLE SETTING  
3/4" SERVICE OR 1" SERVICE

TWIN SETTING  
3/4" SERVICE

ANNE ARUNDEL COUNTY DEPARTMENT OF PUBLIC WORKS

APPROVED: *[Signature]*  
CHIEF ENGINEER  
*[Signature]*  
DESIGN ENGINEER  
DATE: 5/6/88

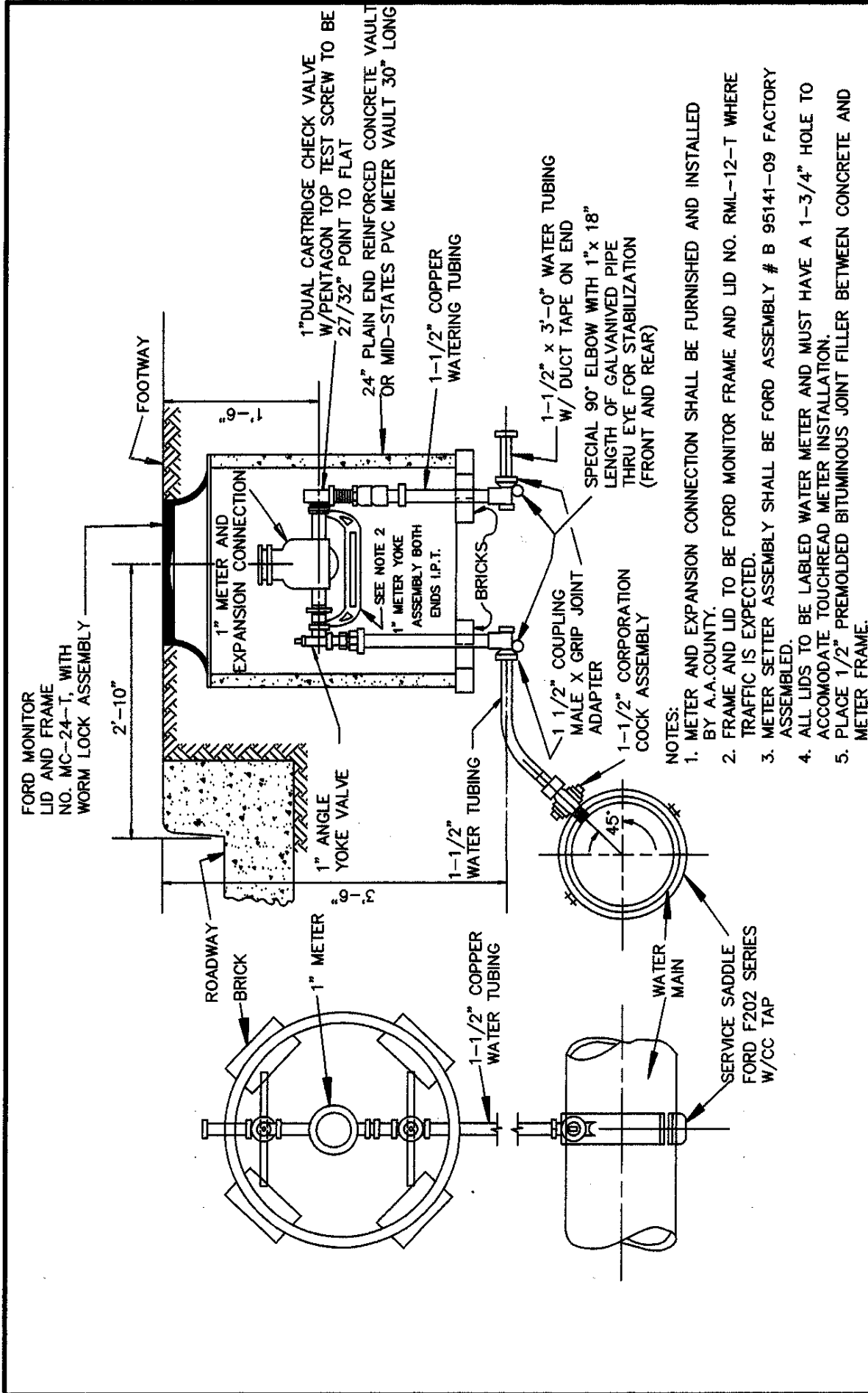
STANDARD WATER DETAILS

PVC METER BOX FOR 3/4" 8.1" SINGLE SERVICE AND 3/4" TWIN SERVICE

REVISED

10 / 95

*[Signature]*  
W 24



W  
25

REVISIONS

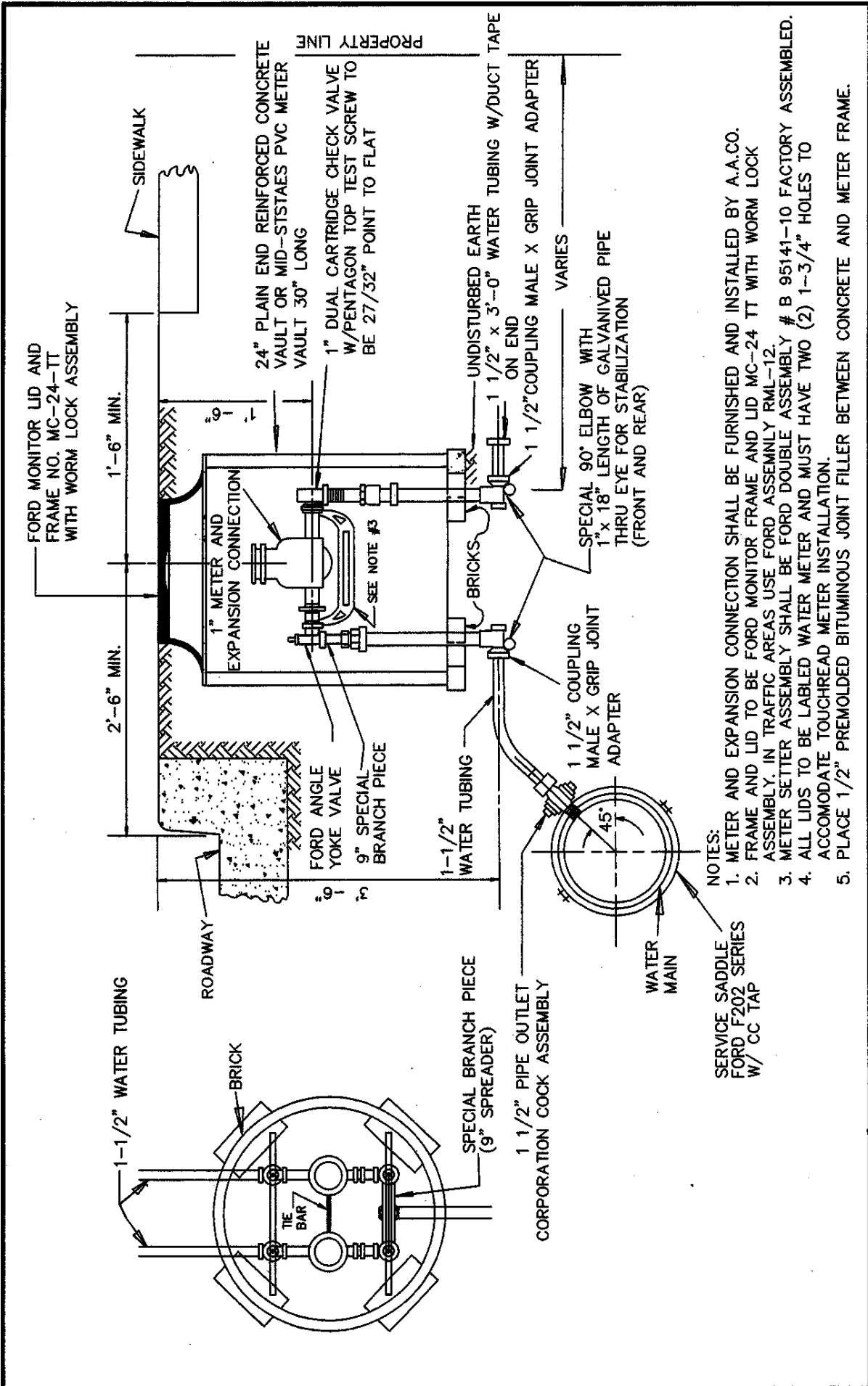
**STANDARD WATER DETAILS**  
**STANDARD INSTALLATION OF**  
**1-1/2" METERED WATER SUPPLY**  
**SERVICE (SINGLE SETTING, 1" METER)**

APPROVED  
*[Signature]* 5/17/99  
CHIEF ENGINEER

*[Signature]* 5/17/99  
DESIGN ENGINEER

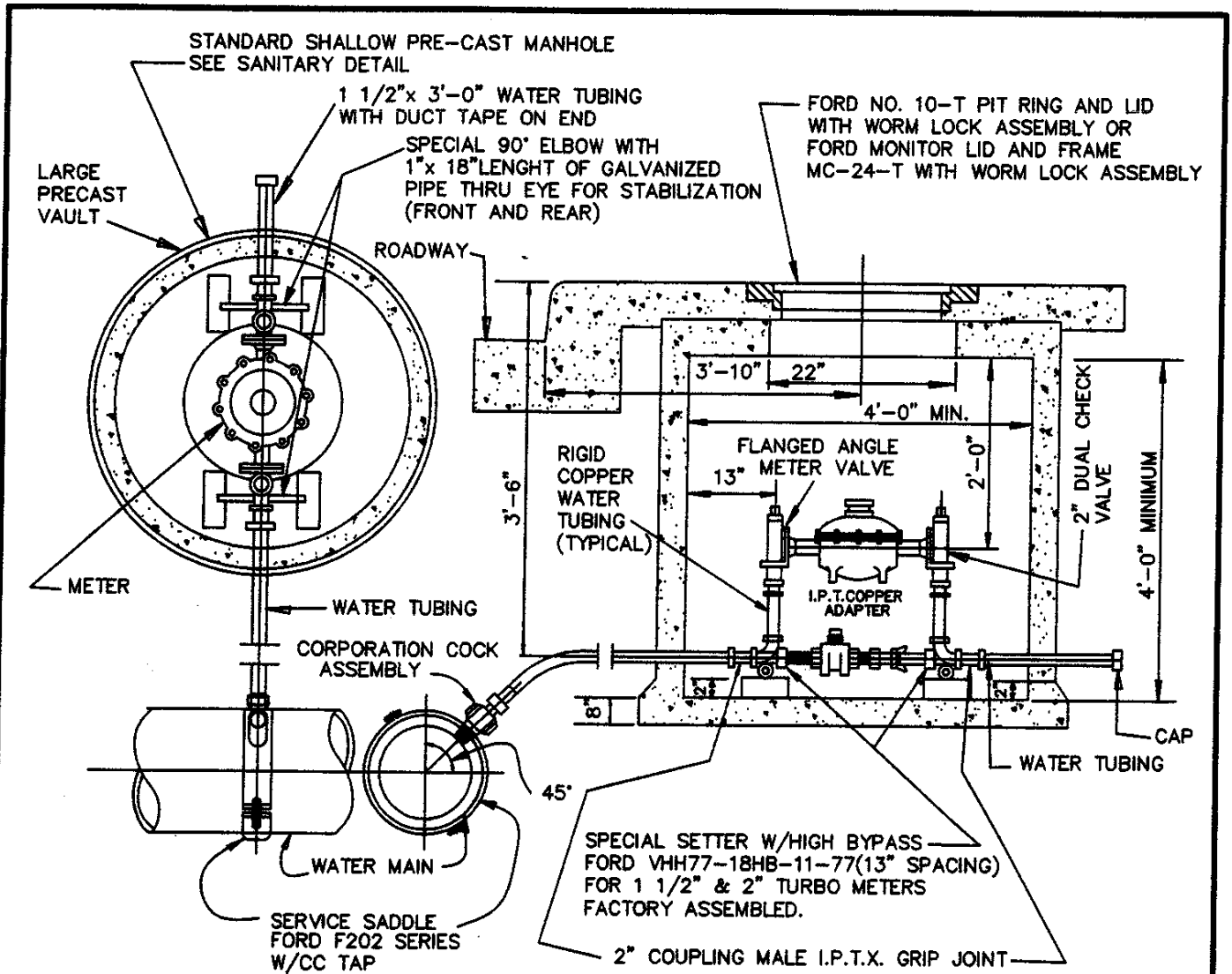
DATE:

ANNE ARUNDEL COUNTY DEPARTMENT OF PUBLIC WORKS



ANNE ARUNDEL COUNTY DEPARTMENT OF PUBLIC WORKS	APPROVED: <i>Ronald Buser</i> 5/17/92 CHIEF ENGINEER	STANDARD WATER DETAILS STANDARD INSTALLATION OF 1 1/2" METERED WATER SUPPLY SERVICE (TWIN SETTING, 1" METERS)	REVISED
	DATE: <i>5/17/92</i> DESIGN ENGINEER		W 25A





**NOTES:**

1. USE FORD NO. 12-T ROUND PIT RING AND LID OR MONITOR FRAME AND LID NO. RML-12-T WHERE TRAFFIC IS EXPECTED.
2. ALL LIDS TO BE LABELED WATER METER AND MUST HAVE 1-3/4" HOLE TO ACCOMODATE TOUCHREAD METER INSTALLATION.
3. PLACE 1/2" PREMOLDED BITUMINOUS JOINT FILLER BETWEEN CONCRETE AND METER FRAME.
4. METER SHALL BE FURNISHED AND INSTALLED BY A.A. COUNTY.
5. FLANGED ANGLE METER SHALL HAVE METER SUPPORT BRACKETS.
6. ACQUIRE AND INSTALL METER CASING FROM A.A. COUNTY METER SECTION BEFORE ASSEMBLING CUSTOM SETTER.
7. 3" LONG METER ADAPTER REQUIRED FOR 2" METER MUST BE FACTORY ASSEMBLED.
8. FLANGED ANGLE METER VALVE AND DUAL CHECK TO BE DRILLED FOR 1 1/2" AND 2" METERS.

ANNE ARUNDEL COUNTY DEPARTMENT OF PUBLIC WORKS	APPROVED <i>Donald C. Brown</i> 5/17/99 CHIEF ENGINEER	<b>STANDARD WATER DETAILS</b>  <b>STANDARD INSTALLATION OF 2" METERED WATER SUPPLY SERVICE (1-1/2" OR 2" METER)</b>	REVISED	<b>W</b> <hr/> <b>26</b>
	DESIGN ENGINEER DATE:			

REVISED

STANDARD WATER DETAILS

STANDARD INSTALLATION FOR  
4" OR LARGER DOMESTIC SERVICE

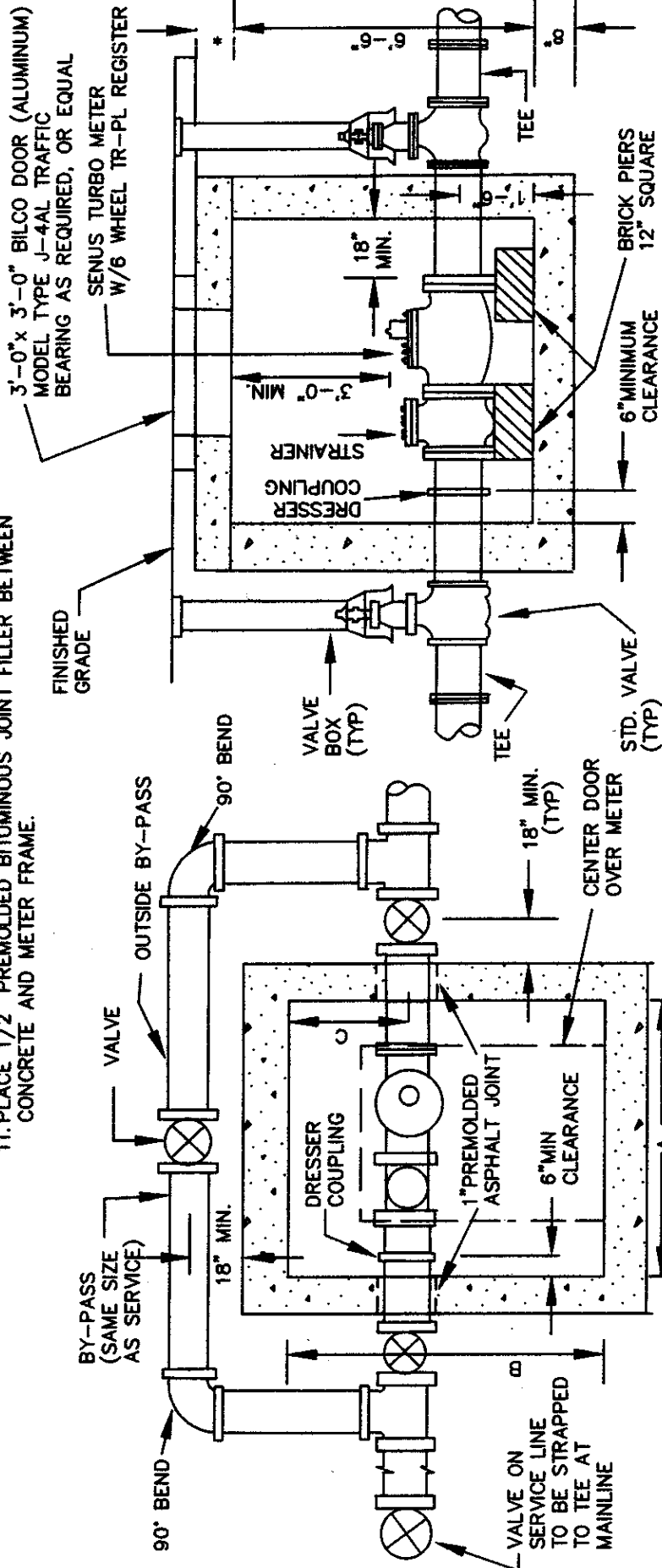
APPROVED  
*Donald Brown* 5/17/99  
CHIEF ENGINEER  
*Johnnie* 4/12/99  
DESIGN ENGINEER  
DATE: \_\_\_\_\_

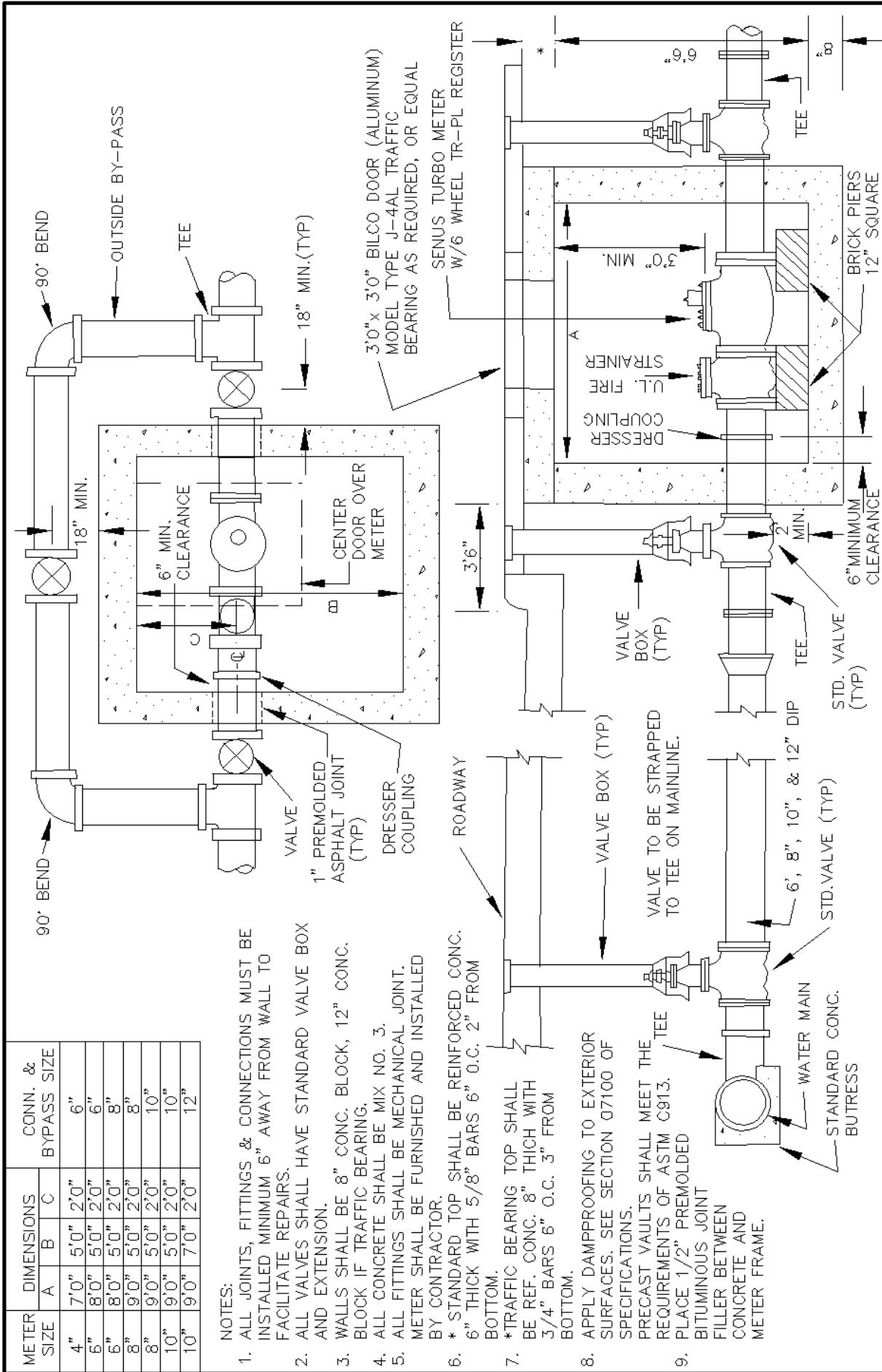
ANNE ARUNDEL  
COUNTY  
DEPARTMENT OF  
PUBLIC WORKS

METER SIZE	DIMENSIONS			CONN. & BYPASS SIZE
	A	B	C	
3"	5'-0"	3'-0"	1'-0"	4"
4"	5'-0"	3'-0"	1'-0"	6"
6"	7'-0"	5'-0"	2'-0"	6"
6"	7'-0"	5'-0"	2'-0"	8"
8"	8'-0"	5'-0"	2'-0"	8"
8"	8'-0"	5'-0"	2'-0"	10"
10"	8'-0"	5'-0"	2'-0"	10"
10"	8'-0"	7'-0"	2'-0"	12"

NOTES:

1. PRECAST VAULT SHALL MEET THE REQUIREMENTS OF ASTM C913.
2. ALL FITTINGS SHALL BE MECHANICAL JOINT, D.I. CLASS 153.
3. WALLS SHALL BE 8" CONCRETE BLOCK, 12" CONCRETE BLOCK IF TRAFFIC BEARING.
4. ALL CONCRETE SHALL BE MIX NO.3.
5. ALL VALVES SHALL HAVE STANDARD VALVE BOX AND EXTENSION.
6. METER TO BE FURNISHED AND INSTALLED BY THE CONTRACTOR.
7. APPLY DAMPROOFING TO EXTERIOR SURFACES. SEE SECTION 07100 OF SPECIFICATIONS.
8. \*STANDARD TOP SHALL BE REINFORCED CONCRETE 6" THICK WITH 5/8" BARS 6" O.C.2" FROM BOTTOM.
9. \*TRAFFIC BEARING TOP SHALL BE REINFORCED CONCRETE 8" THICK WITH 3/4" BARS 6" O.C. 3" FROM BOTTOM.
10. ALL JOINTS, FITTINGS AND CONNECTIONS MUST BE INSTALLED MINIMUM 6" AWAY FROM THE WALL TO FACILITATE REPAIRS.
11. PLACE 1/2" PREMOULDED BITUMINOUS JOINT FILLER BETWEEN CONCRETE AND METER FRAME.





METER SIZE		DIMENSIONS		CONN. & BYPASS SIZE	
4"	7'0"	A	B	C	6"
6"	8'0"	5'0"	2'0"	2'0"	6"
6"	8'0"	5'0"	2'0"	2'0"	8"
8"	9'0"	5'0"	2'0"	2'0"	8"
8"	9'0"	5'0"	2'0"	2'0"	10"
10"	9'0"	5'0"	2'0"	2'0"	10"
10"	9'0"	7'0"	2'0"	2'0"	12"

NOTES:

1. ALL JOINTS, FITTINGS & CONNECTIONS MUST BE INSTALLED MINIMUM 6" AWAY FROM WALL TO FACILITATE REPAIRS.
2. ALL VALVES SHALL HAVE STANDARD VALVE BOX AND EXTENSION.
3. WALLS SHALL BE 8" CONC. BLOCK, 12" CONC. BLOCK IF TRAFFIC BEARING.
4. ALL CONCRETE SHALL BE MIX NO. 3.
5. ALL FITTINGS SHALL BE MECHANICAL JOINT. METER SHALL BE FURNISHED AND INSTALLED BY CONTRACTOR.
6. \* STANDARD TOP SHALL BE REINFORCED CONC. 6" THICK WITH 5/8" BARS 6" O.C. 2" FROM BOTTOM.
7. \*TRAFFIC BEARING TOP SHALL BE REF. CONC. 8" THICK WITH 3/4" BARS 6" O.C. 3" FROM BOTTOM.
8. APPLY DAMPROOFING TO EXTERIOR SURFACES. SEE SECTION 07100 OF SPECIFICATIONS.
9. PRECAST VAULTS SHALL MEET THE REQUIREMENTS OF ASTM C913. PLACE 1/2" PREMOLDED BITUMINOUS JOINT FILLER BETWEEN CONCRETE AND METER FRAME.

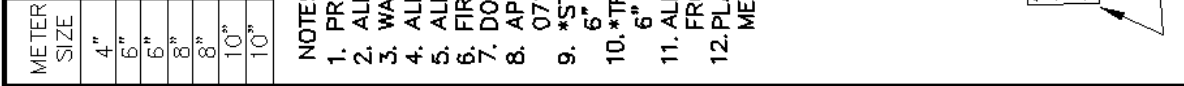
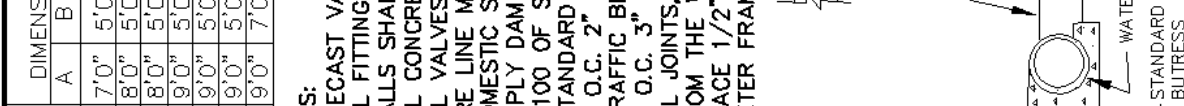
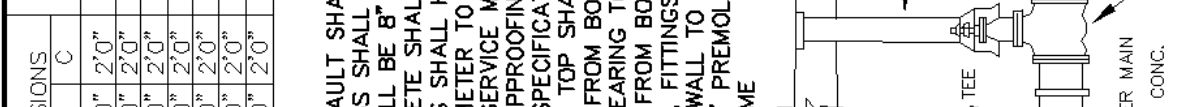
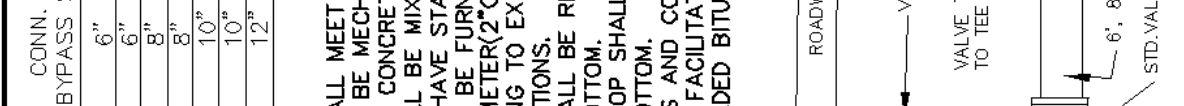
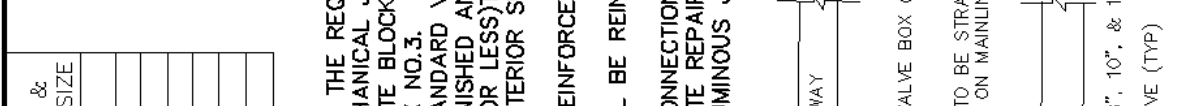
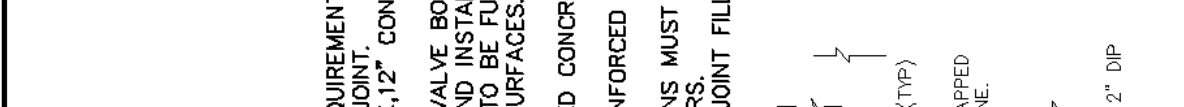
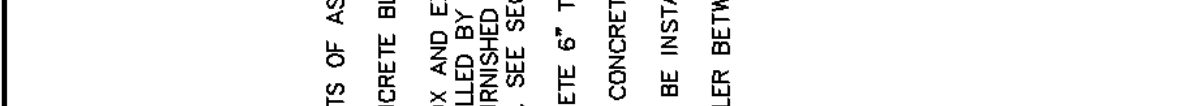
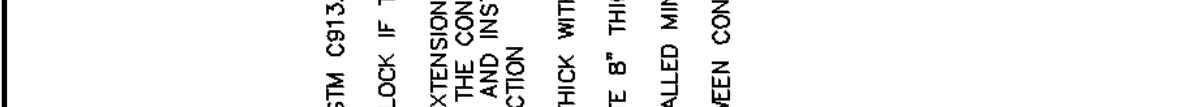
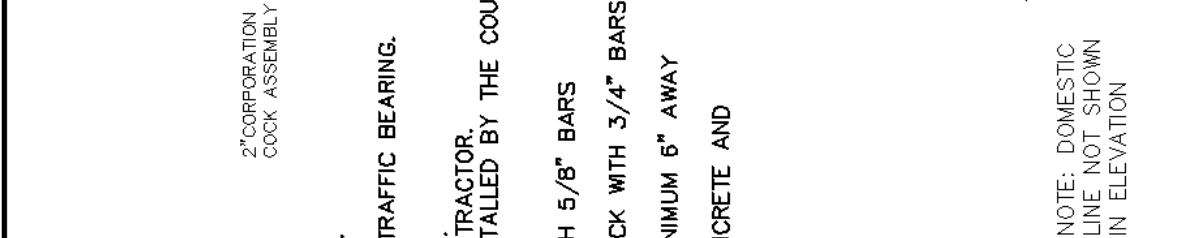
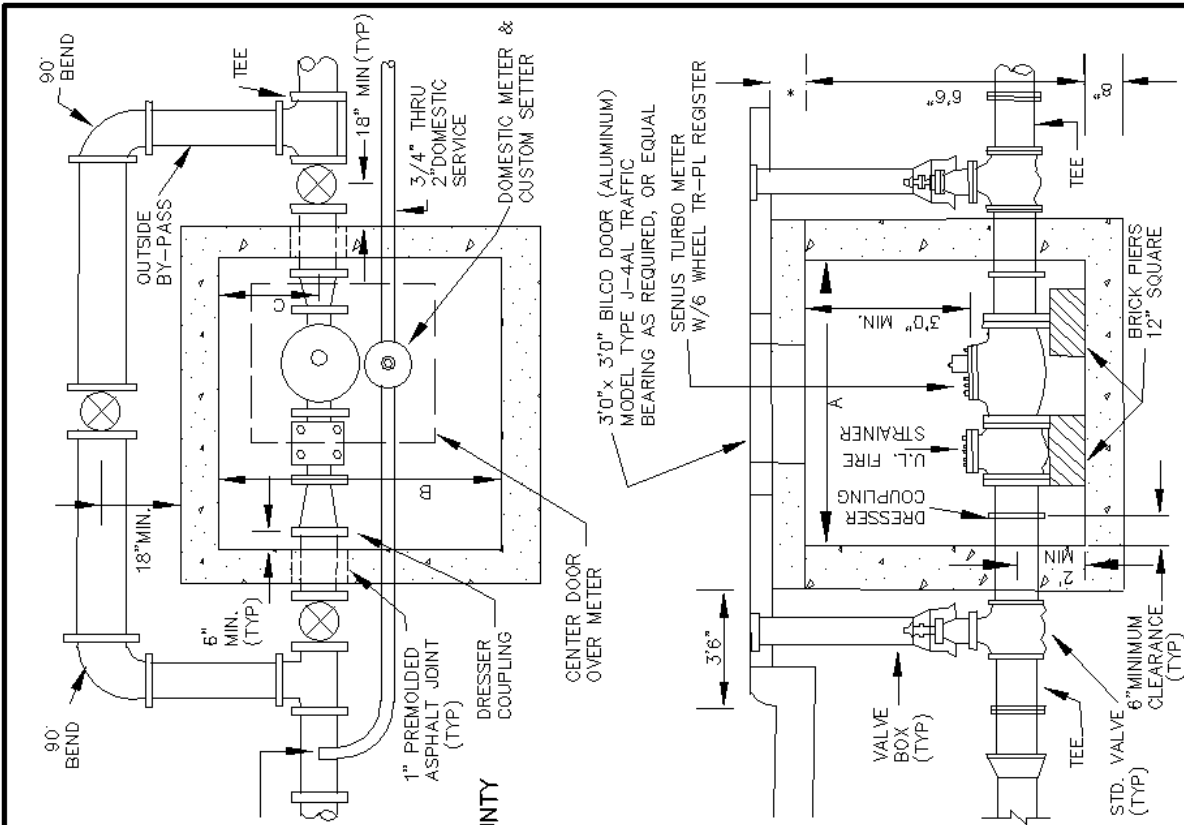
APPROVED	REVISIONS
ANNE ARUNDEL COUNTY DEPARTMENT OF PUBLIC WORKS	W - 28
CHIEF ENGINEER	
DESIGN ENGINEER	
DATE: _____	

REVISED

**STANDARD WATER DETAILS  
STANDARD INSTALLATION 4" OR LARGER  
FIRE SUPPLY SERVICE  
AND SEPERATE DOMESTIC SERVICE**

APPROVED  
CHIEF ENGINEER  
DESIGN ENGINEER  
DATE:

ANNE ARUNDEL  
COUNTY  
DEPARTMENT OF  
PUBLIC WORKS



**NOTES:**

1. PRECAST VAULT SHALL MEET THE REQUIREMENTS OF ASTM C913.
2. ALL FITTINGS SHALL BE MECHANICAL JOINT.
3. WALLS SHALL BE 8" CONCRETE BLOCK, 12" CONCRETE BLOCK IF TRAFFIC BEARING.
4. ALL CONCRETE SHALL BE MIX NO. 3.
5. ALL VALVES SHALL HAVE STANDARD VALVE BOX AND EXTENSION.
6. FIRE LINE METER TO BE FURNISHED AND INSTALLED BY THE CONTRACTOR.
7. DOMESTIC SERVICE METER (2" OR LESS) TO BE FURNISHED AND INSTALLED BY THE COUNTY.
8. APPLY DAMPROOFING TO EXTERIOR SURFACES. SEE SECTION 07100 OF SPECIFICATIONS.
9. \*STANDARD TOP SHALL BE REINFORCED CONCRETE 6" THICK WITH 5/8" BARS 6" O.C. 2" FROM BOTTOM.
10. \*TRAFFIC BEARING TOP SHALL BE REINFORCED CONCRETE 8" THICK WITH 3/4" BARS 6" O.C. 3" FROM BOTTOM.
11. ALL JOINTS, FITTINGS AND CONNECTIONS MUST BE INSTALLED MINIMUM 6" AWAY FROM THE WALL TO FACILITATE REPAIRS.
12. PLACE 1/2" PREMOLED BITUMINOUS JOINT FILLER BETWEEN CONCRETE AND METER FRAME

NOTE: DOMESTIC LINE NOT SHOWN IN ELEVATION

REVISED

**STANDARD WATER DETAILS  
STANDARD INSTALLATION 3" OR LARGER  
FIRE SUPPLY SERVICE  
AND DOMESTIC SERVICE**

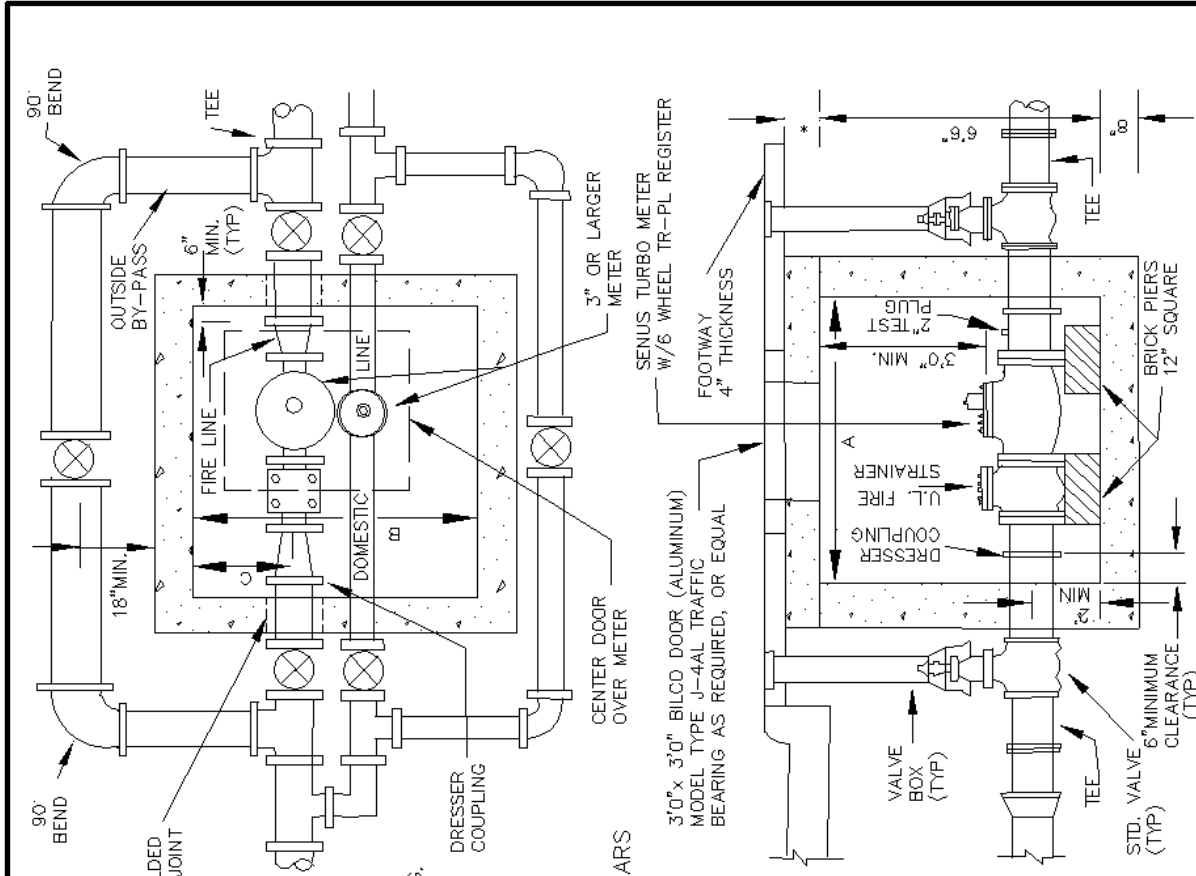
APPROVED

ANNE ARUNDEL  
COUNTY  
DEPARTMENT OF  
PUBLIC WORKS

CHIEF ENGINEER

DESIGN ENGINEER

DATE: \_\_\_\_\_

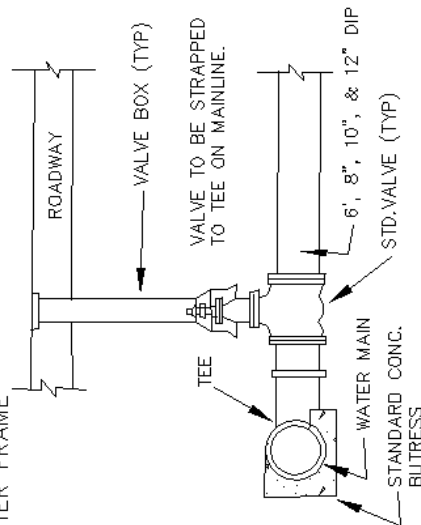


NOTE: DOMESTIC LINE NOT SHOWN IN ELEVATION

METER SIZE	DIMENSIONS			CONN. & BYPASS SIZE
	A	B	C	
3"	7'0"	5'0"	2'0"	4"
4"	7'0"	5'0"	2'0"	6"
6"	8'0"	5'0"	2'0"	6"
6"	8'0"	5'0"	2'0"	8"
8"	9'0"	7'0"	2'0"	8"
8"	9'0"	7'0"	2'0"	10"
10"	9'0"	7'0"	2'0"	10"
10"	9'0"	7'0"	2'0"	12"

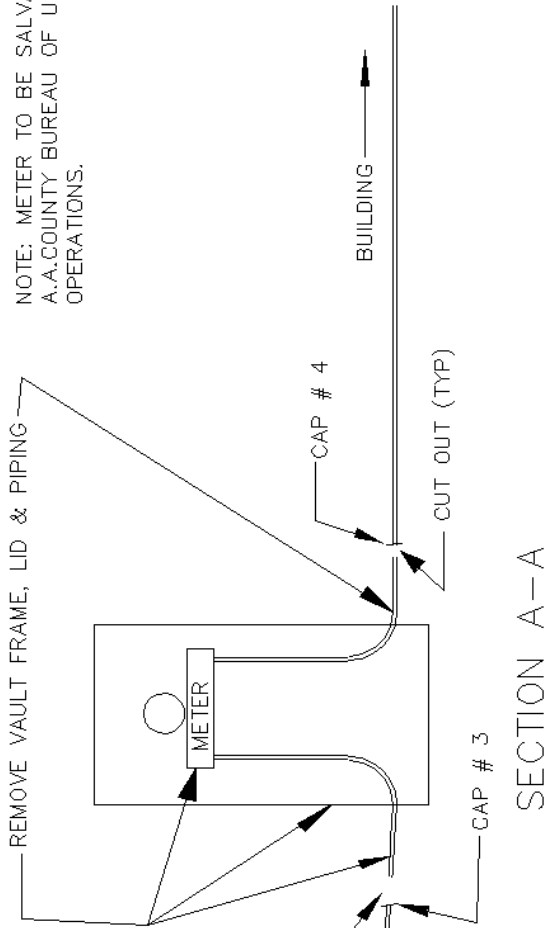
NOTES:

1. PRECAST VAULT SHALL MEET THE REQUIREMENTS OF ASTM C913.
2. ALL FITTINGS SHALL BE MECHANICAL JOINT.
3. WALLS SHALL BE 8" CONCRETE BLOCK, 12" CONCRETE BLOCK IF TRAFFIC BEARING.
4. ALL CONCRETE SHALL BE MIX NO.3. (3,500 PSI)
5. ALL VALVES SHALL HAVE STANDARD VALVE BOX AND EXTENSION.
6. METER TO BE FURNISHED AND INSTALLED BY THE CONTRACTOR.
7. APPLY DAMPROOFING TO EXTERIOR SURFACES. SEE SECTION 07100 OF SPECIFICATIONS.
8. \*STANDARD TOP SHALL BE REINFORCED CONCRETE 6" THICK WITH 5/8" BARS 6" O.C. 2" FROM BOTTOM.
9. \*TRAFFIC BEARING TOP SHALL BE REINFORCED CONCRETE 8" THICK WITH 3/4" BARS 6" O.C. 3" FROM BOTTOM.
10. ALL JOINTS, FITTINGS AND CONNECTIONS MUST BE INSTALLED MINIMUM 6" AWAY FROM THE WALL TO FACILITATE REPAIRS.
11. PLACE 1/2" PREMOLDED BITUMINOUS JOINT FILLER BETWEEN CONCRETE AND METER FRAME



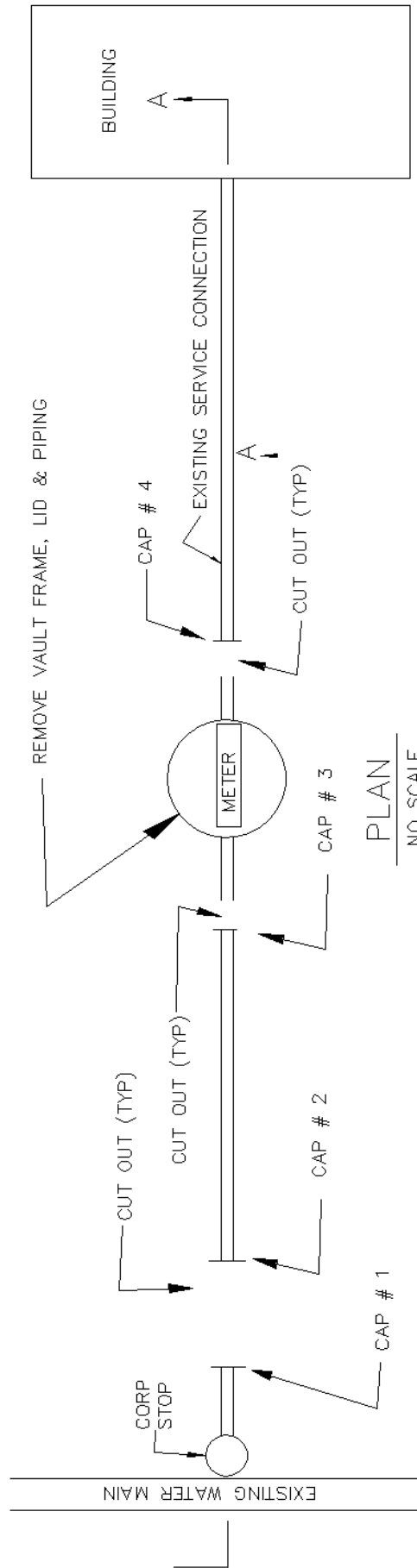
**SEQUENCE OF ABANDONMENT**

1. EXISTING SERVICE TO BE SHUT OFF AT THE CORP STOP ON THE MAIN.
2. SERVICE TO BE CUT OUT AND CAPPED IN THE NUMERICAL SEQUENCE SHOWN.
3. THE METER AND METER VAULT TO BE REMOVED.
4. THE VOID CREATED BY REMOVAL OF THE METER AND VAULT IS TO BE FILLED, GRADED AND STABILIZED TO MEET EXISTING GRADE.



NOTE: METER TO BE SALVAGED TO A.A.COUNTY BUREAU OF UTILITY OPERATIONS.

**SECTION A-A**  
NO SCALE



**PLAN**  
NO SCALE

REVISED	

**STANDARD WATER DETAILS  
ABANDONMENT OF EXISTING  
WATER SERVICE CONNECTION TO  
FACILITATE SERVICE UPGRADE**

APPROVED	_____
	CHIEF ENGINEER
	_____
	DESIGN ENGINEER
DATE:	_____

ANNE ARUNDEL  
COUNTY  
DEPARTMENT OF  
PUBLIC WORKS