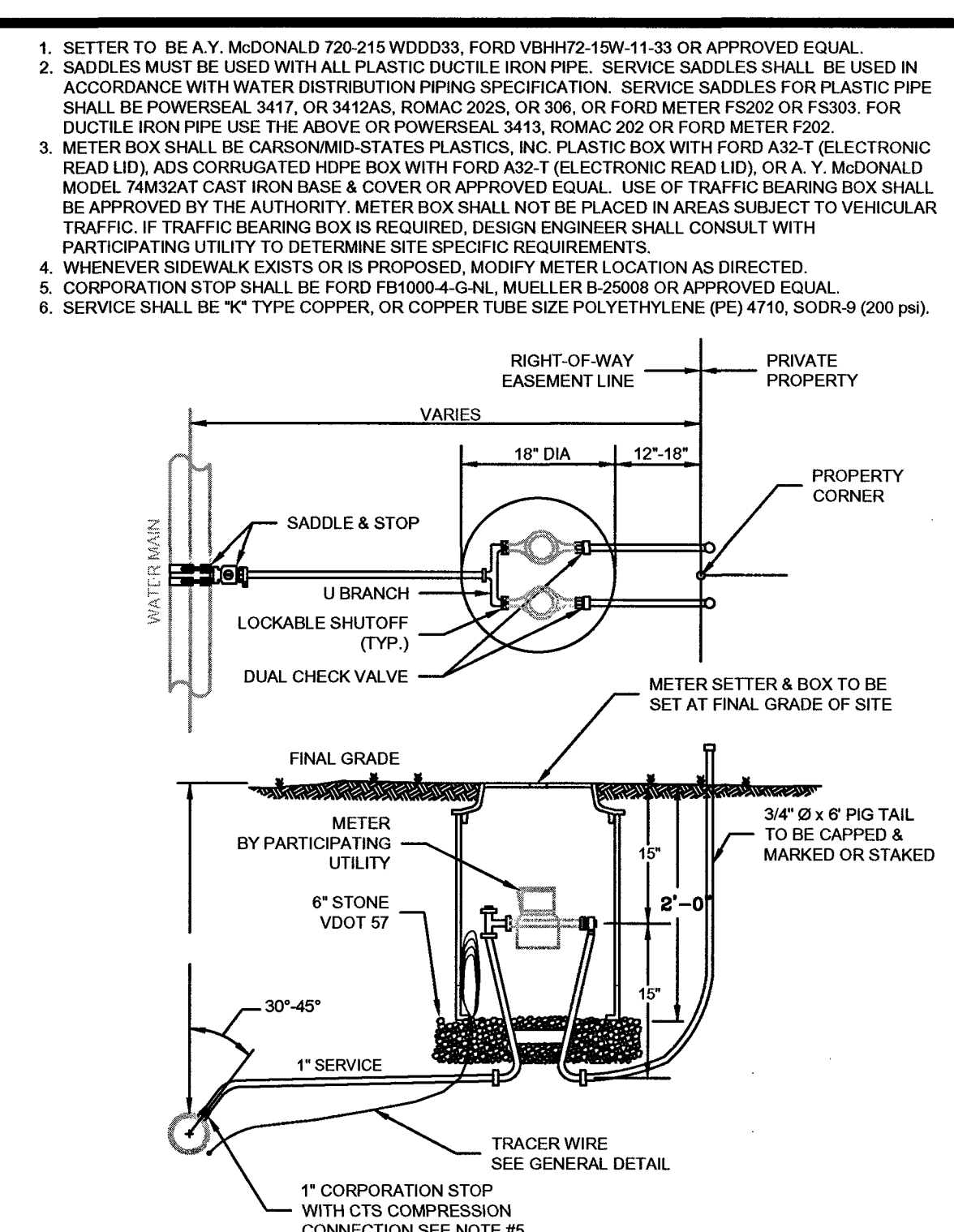
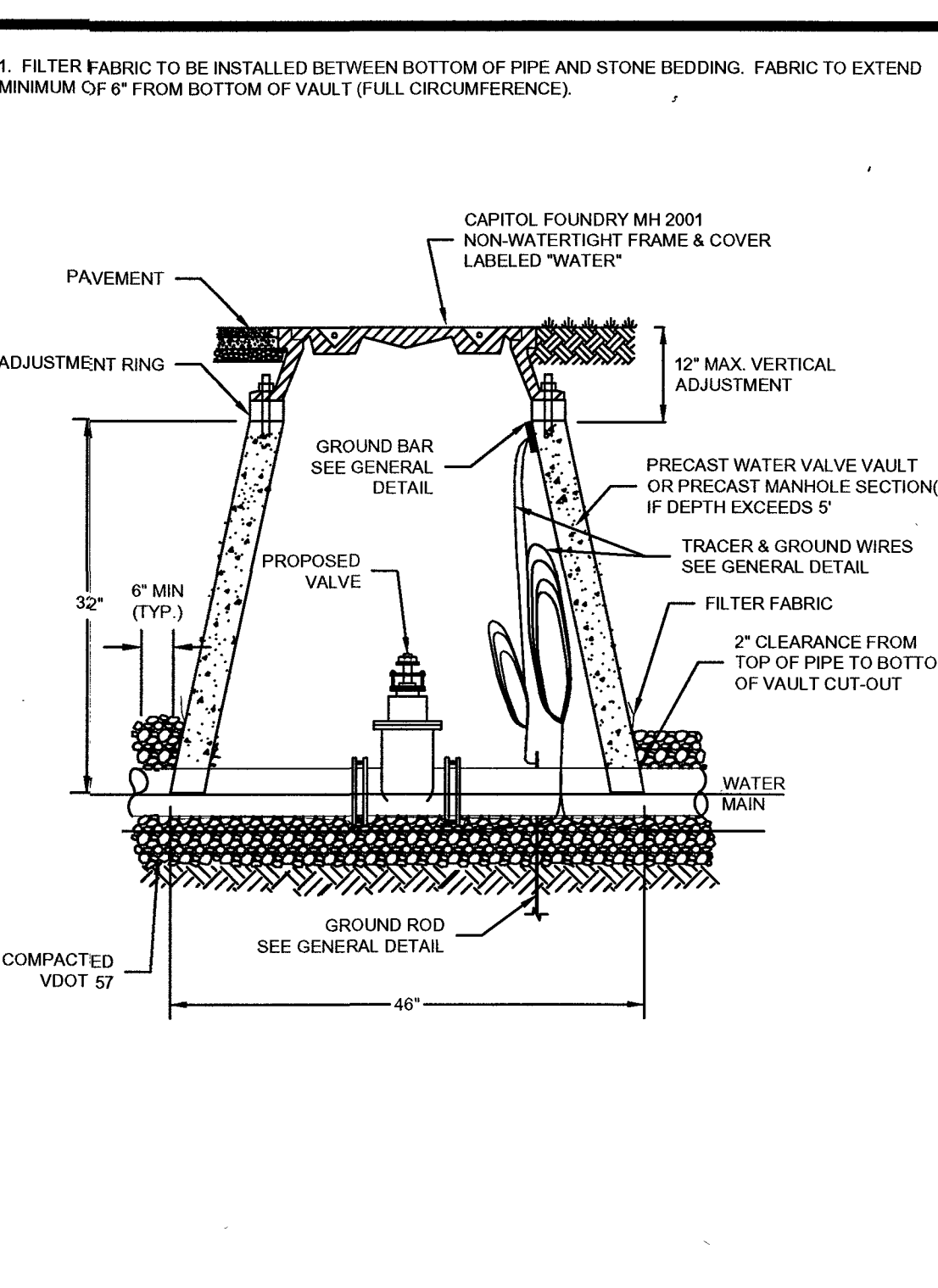


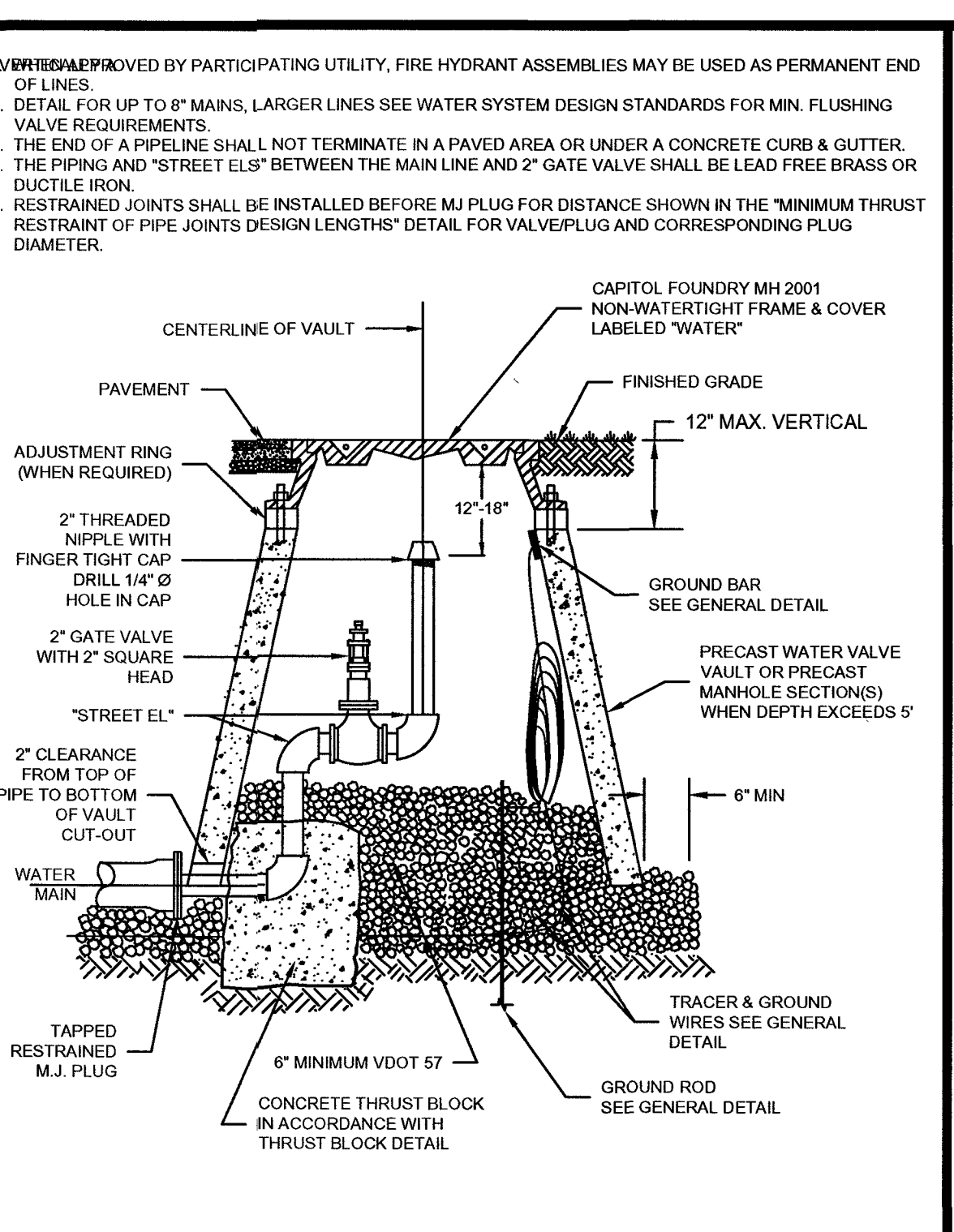
WESTERN VIRGINIA REGIONAL - CONSTRUCTION DETAIL
SINGLE RESIDENTIAL
WATER SERVICE - (NEW DEVELOPMENT)
(LINE PRESSURE UNDER 120 PSI)
02/10/15 W-1



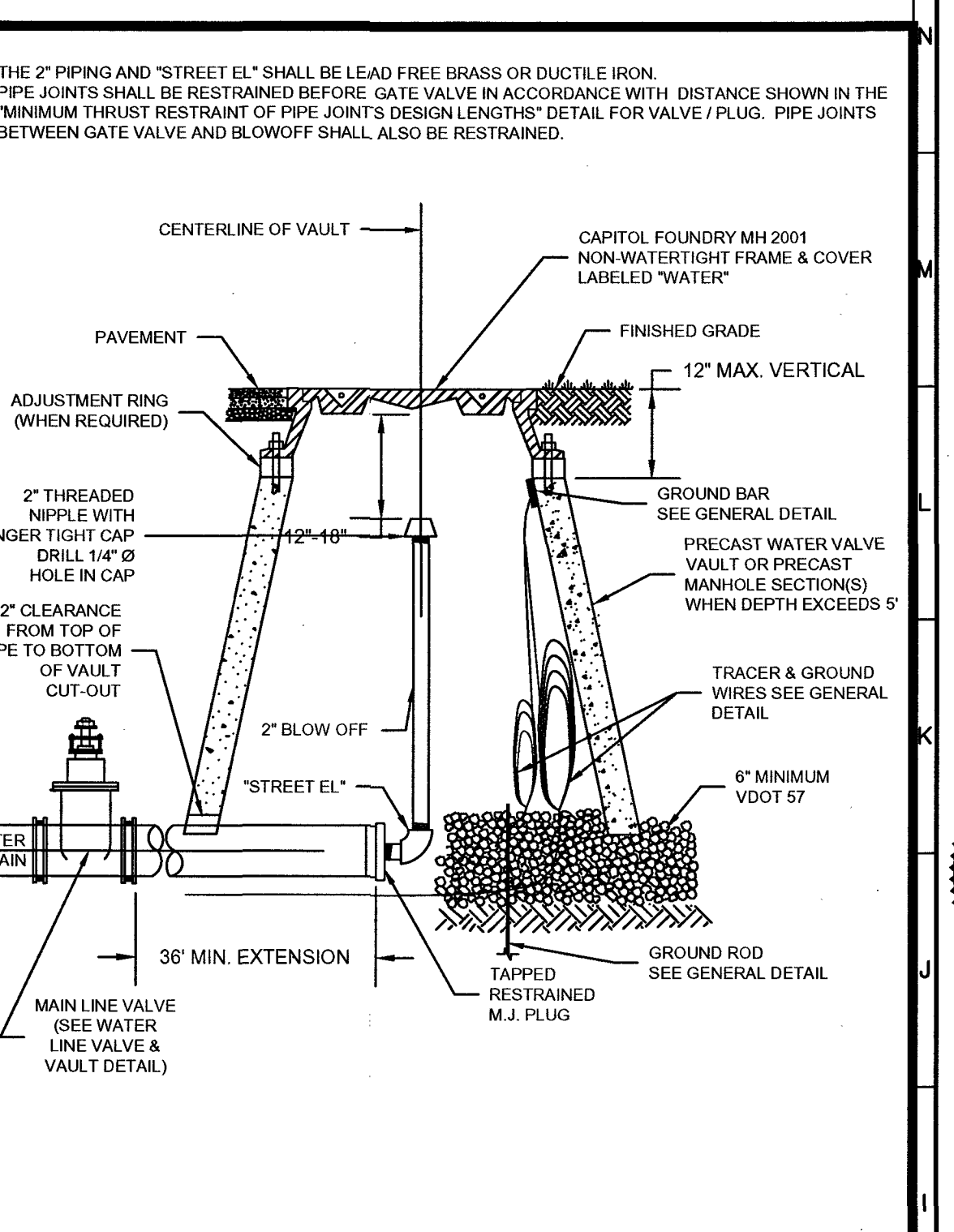
WESTERN VIRGINIA REGIONAL - CONSTRUCTION DETAIL
DOUBLE RESIDENTIAL
WATER SERVICE
(LINE PRESSURE UNDER 120 PSI)
02/10/15 W-4



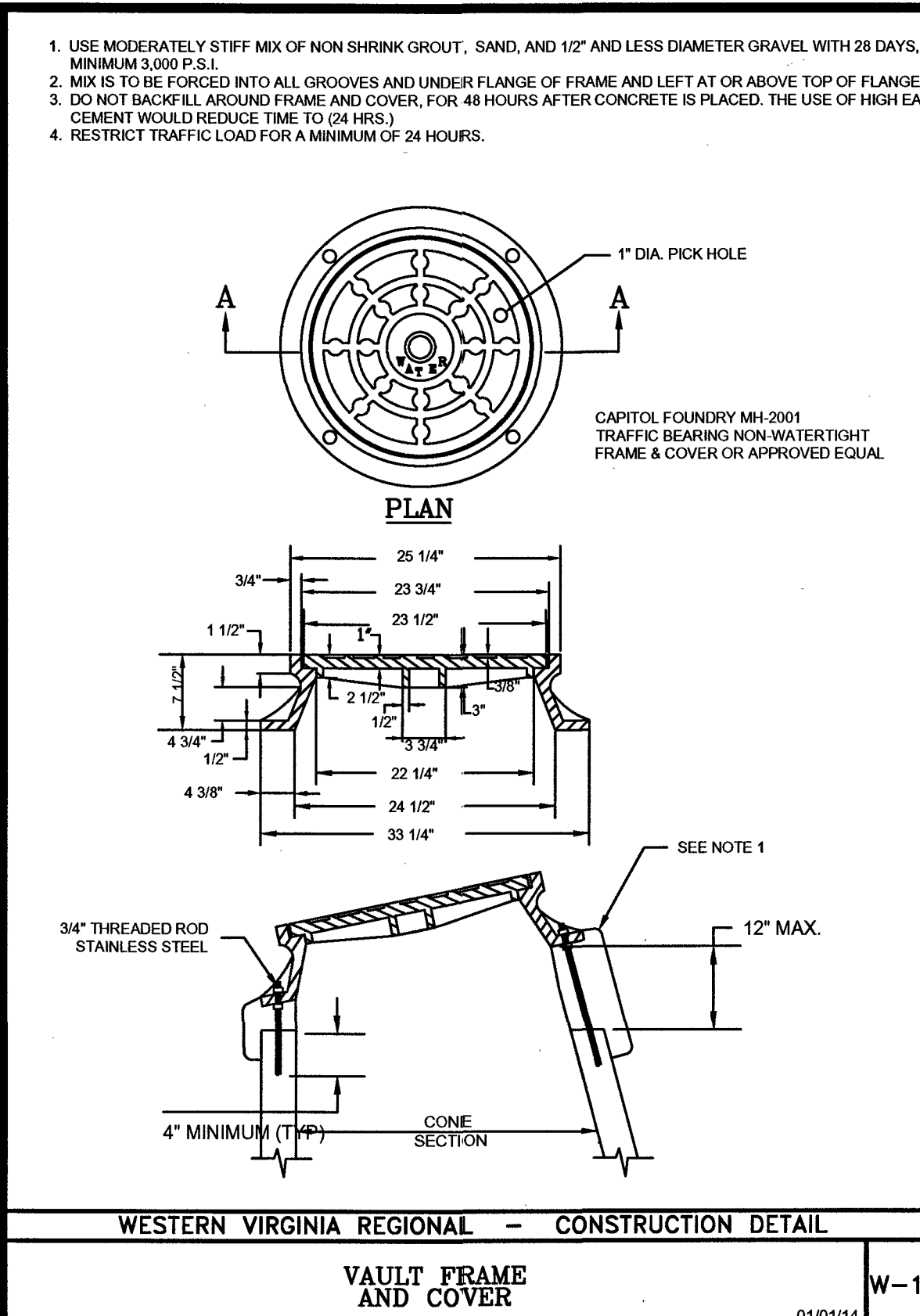
WESTERN VIRGINIA REGIONAL - CONSTRUCTION DETAIL
WATER LINE VALVE & VAULT
01/10/14 W-9



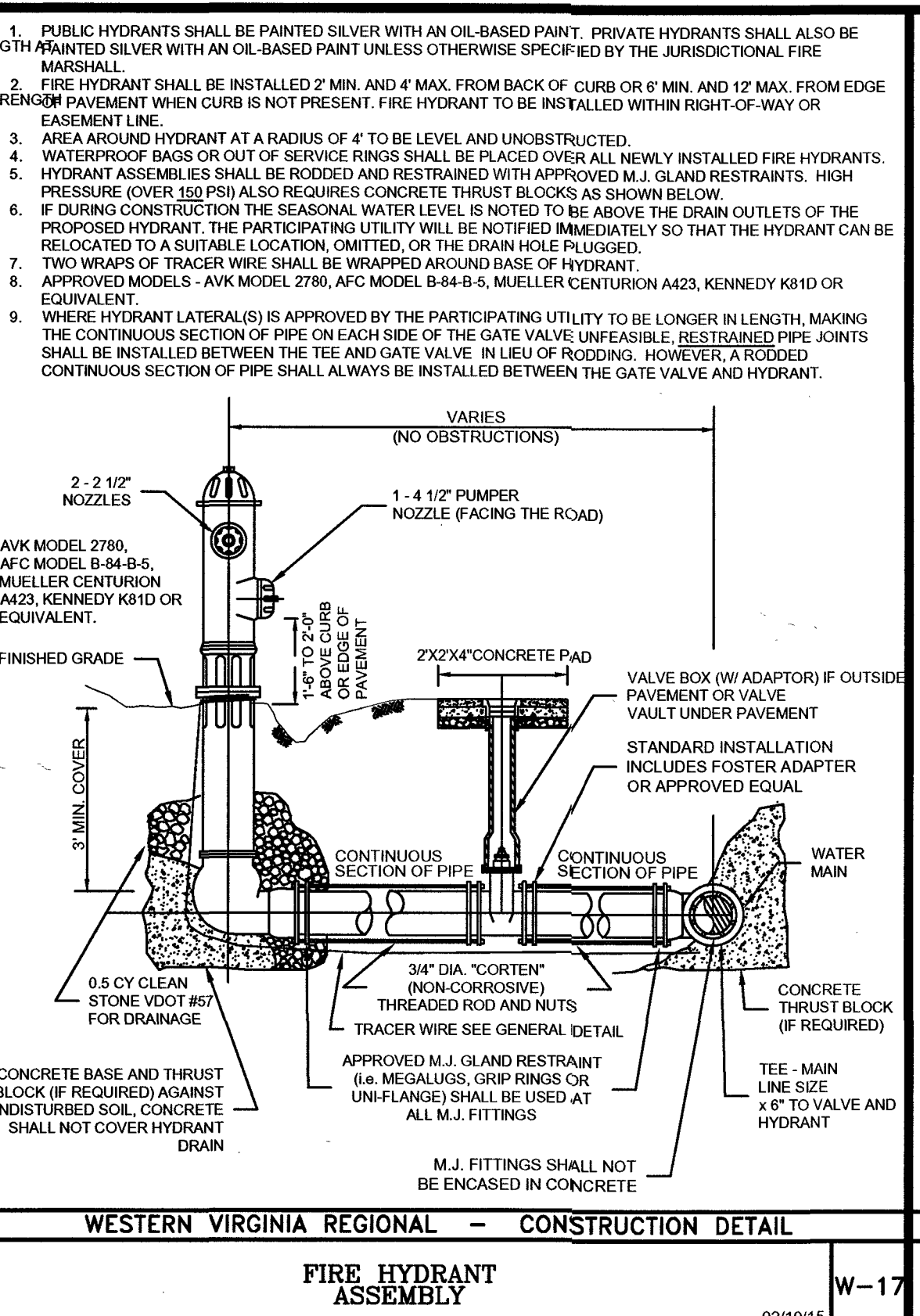
WESTERN VIRGINIA REGIONAL - CONSTRUCTION DETAIL
PERMANENT END OF LINE BLOW-OFF ASSEMBLY
02/10/15 W-10



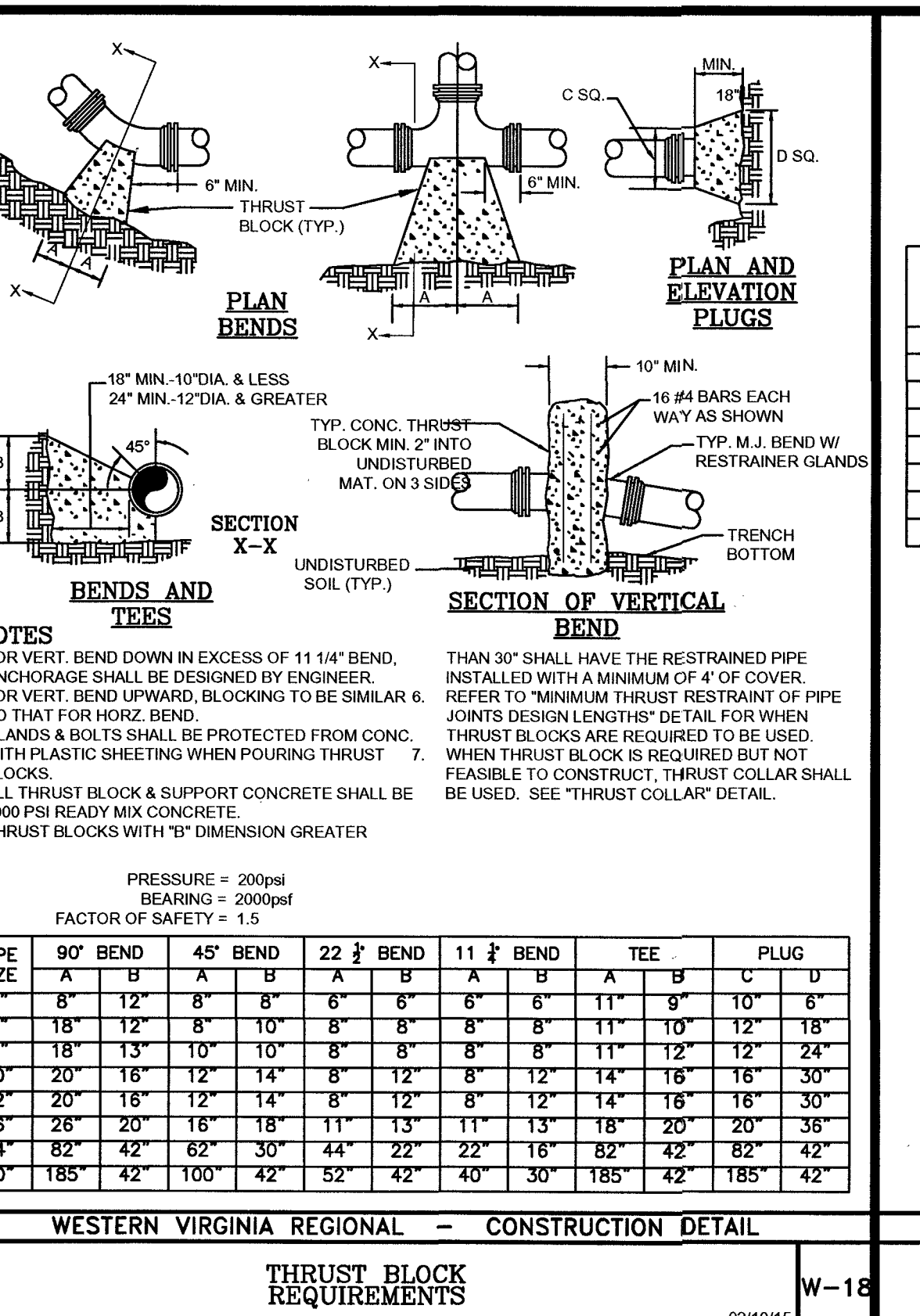
WESTERN VIRGINIA REGIONAL - CONSTRUCTION DETAIL
TEMPORARY END OF LINE BLOW-OFF ASSEMBLY
01/10/14 W-11



WESTERN VIRGINIA REGIONAL - CONSTRUCTION DETAIL
VAULT FRAME AND COVER
01/10/14 W-16



WESTERN VIRGINIA REGIONAL - CONSTRUCTION DETAIL
FIRE HYDRANT ASSEMBLY
02/10/15 W-17



WESTERN VIRGINIA REGIONAL - CONSTRUCTION DETAIL
THRUST BLOCK REQUIREMENTS
02/10/15 W-18

FACTOR OF SAFETY = 1.5

PIPE MAT'L	90° BEND	45° BEND	22 1/2° BEND	11 1/4° BEND	VALVE/ PLUG (NOTE 2)	TEE BRANCH (NOTE 3)	REDUCER (NOTE 4)	45° VERT.	22 1/2° VERT.	11 1/4° VERT.
D.I.	28'	21'	6'	3'	50'	26'	26'	21'	10'	5'
D.I.	36'	21'	8'	4'	65'	41'	27'	27'	13'	7'
D.I.	43'	21'	9'	5'	77'	53'	26'	32'	16'	8'
D.I.	51'	21'	10'	5'	91'	67'	27'	38'	18'	9'
PVC	29'	21'	6'	3'	78'	25'	40'	32'	16'	8'
PVC	37'	21'	8'	4'	102'	49'	43'	42'	21'	10'
PVC	44'	21'	9'	5'	122'	68'	41'	51'	25'	12'
PVC	51'	21'	11'	6'	143'	89'	42'	60'	29'	15'

1. ALL JOINTS SHALL BE RESTRAINED ON BOTH SIDES OF THE FITTING AND DOCUMENTED BY THE SPECTOR FOR THE LENGTH SHOWN UNLESS OTHERWISE INDICATED.

2. RESTRAINED LENGTH SHOWN REFERS TO ANY DESIGNED OR POTENTIAL LINE STOP, INCLUDING ALL GATE VALVES.

3. RESTRAINED LENGTH SHOWN REFERS TO THE BRANCH LINE ONLY. THE CONTINUOUS PIPE LENGTH OF THE MAIN RUN SHALL BE A MINIMUM OF 10' ON EACH SIDE OF THE TEE.

4. RESTRAINED LENGTH SHOWN IS BASED ON REDUCING PIPE DIAMETER TO ONE SIZE SMALLER THAN PIPE LISTED (ANY OTHER DIAMETER REDUCTION WILL REQUIRE ADDITIONAL CALCULATIONS BEFORE INSTALLATION). RESTRAINED LENGTH SHOWN IS UPSTREAM ON THE LARGE SIDE OF THE REDUCER.

5. 12" AND SMALLER DIAMETER: IF UNDER 150 PSI WORKING PRESSURE, RESTRAINED JOINT(S) ARE TO BE USED. IF EQUAL TO OR OVER 150 PSI WORKING PRESSURE, BOTH THRUST BLOCK(S) AND RESTRAINED JOINT(S) SHALL BE USED.

6. LARGER THAN 12" DIAMETER: IF UNDER 100 PSI WORKING PRESSURE, RESTRAINED JOINT(S) ARE TO BE USED. IF EQUAL TO OR OVER 100 PSI WORKING PRESSURE, BOTH THRUST BLOCK(S) AND RESTRAINED JOINT(S) SHALL BE USED (UNLESS OTHERWISE APPROVED BY THE PARTICIPATING UTILITY).

7. FOR RESTRAINED JOINT PIPING REQUIREMENTS AT FITTING R.J. PVC AND R.J. DIP MAY BE USED INTERCHANGEABLY WITH APPROVAL FROM PARTICIPATING UTILITY. CONTRACTOR MUST PLAN ACCORDINGLY FOR THE DIFFERENCE IN PVC AND DIP BELL AND SHOOT DIMENSIONS.

WESTERN VIRGINIA REGIONAL — CONSTRUCTION DETAIL

MINIMUM THRUST
RESTRAINT
OF PIPE JOINTS

W-19

WESTERN VIRGINIA REGIONAL - CONSTRUCTION DETAIL
MINIMUM THRUST RESTRAINT OF PIPE JOINTS DESIGN LENGTHS
02/10/15 W-19