

FACTOR OF SAFETY = 1.5

PIPE SIZE	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.
6"	D.I.	28'	21'	6'	3'	50'	26'	26'	21'	10'	5'
8"	D.I.	36'	21'	8'	4'	65'	41'	27'	27'	13'	7'
10"	D.I.	43'	21'	9'	5'	77'	53'	26'	32'	16'	8'
12"	D.I.	51'	21'	10'	5'	91'	67'	27'	38'	18'	9'
6"	PVC	29'	21'	6'	3'	78'	25'	40'	32'	16'	8'
8"	PVC	37'	21'	8'	4'	102'	49'	43'	42'	21'	10'
10"	PVC	44'	21'	9'	5'	122'	68'	41'	51'	25'	12'
12"	PVC	51'	21'	11'	6'	143'	89'	42'	60'	29'	15'

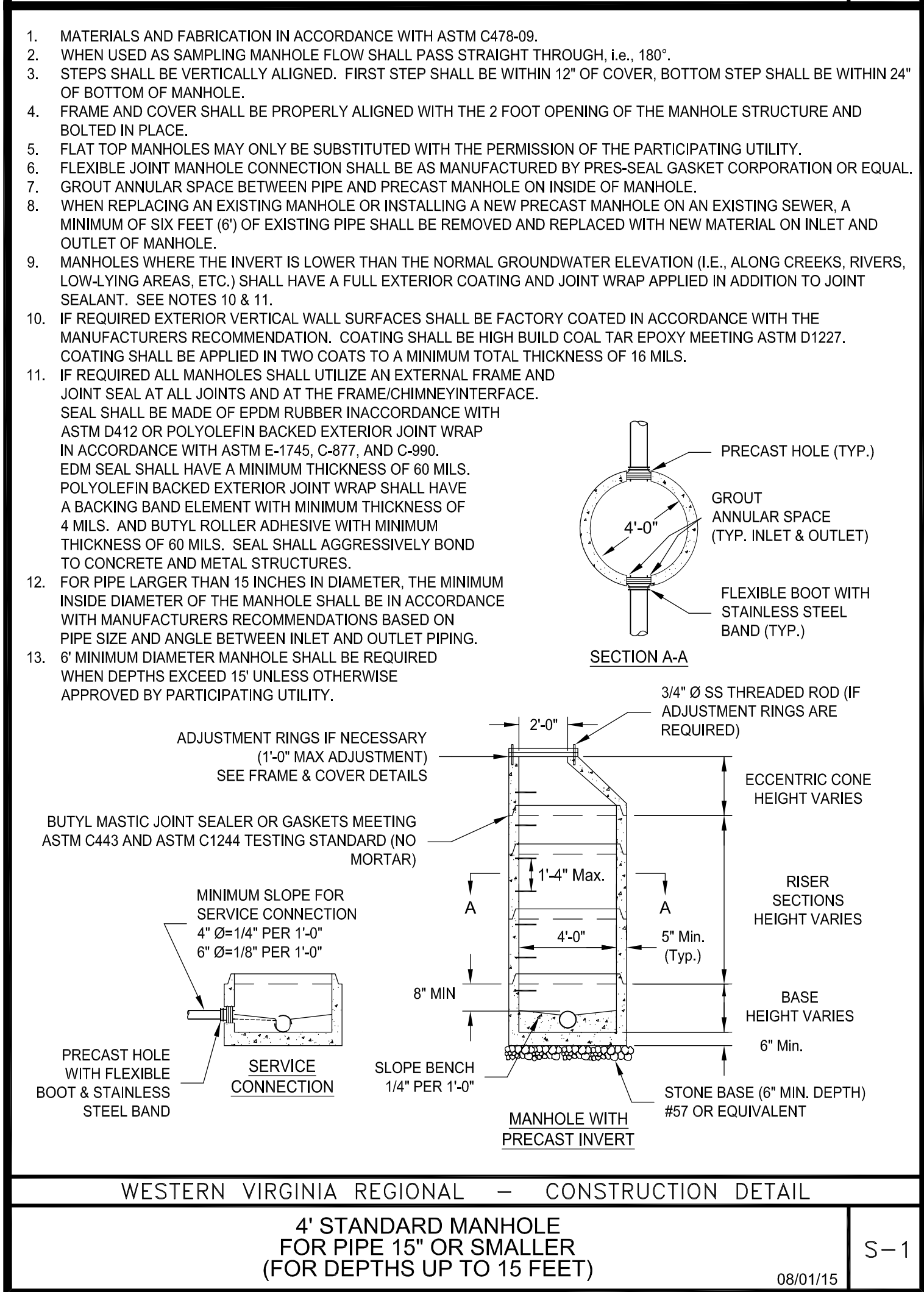
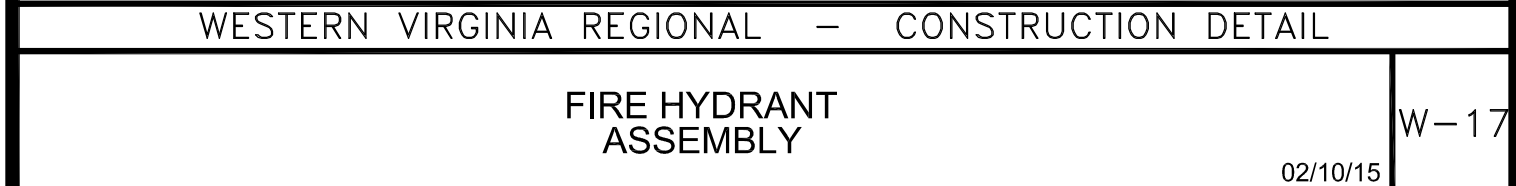
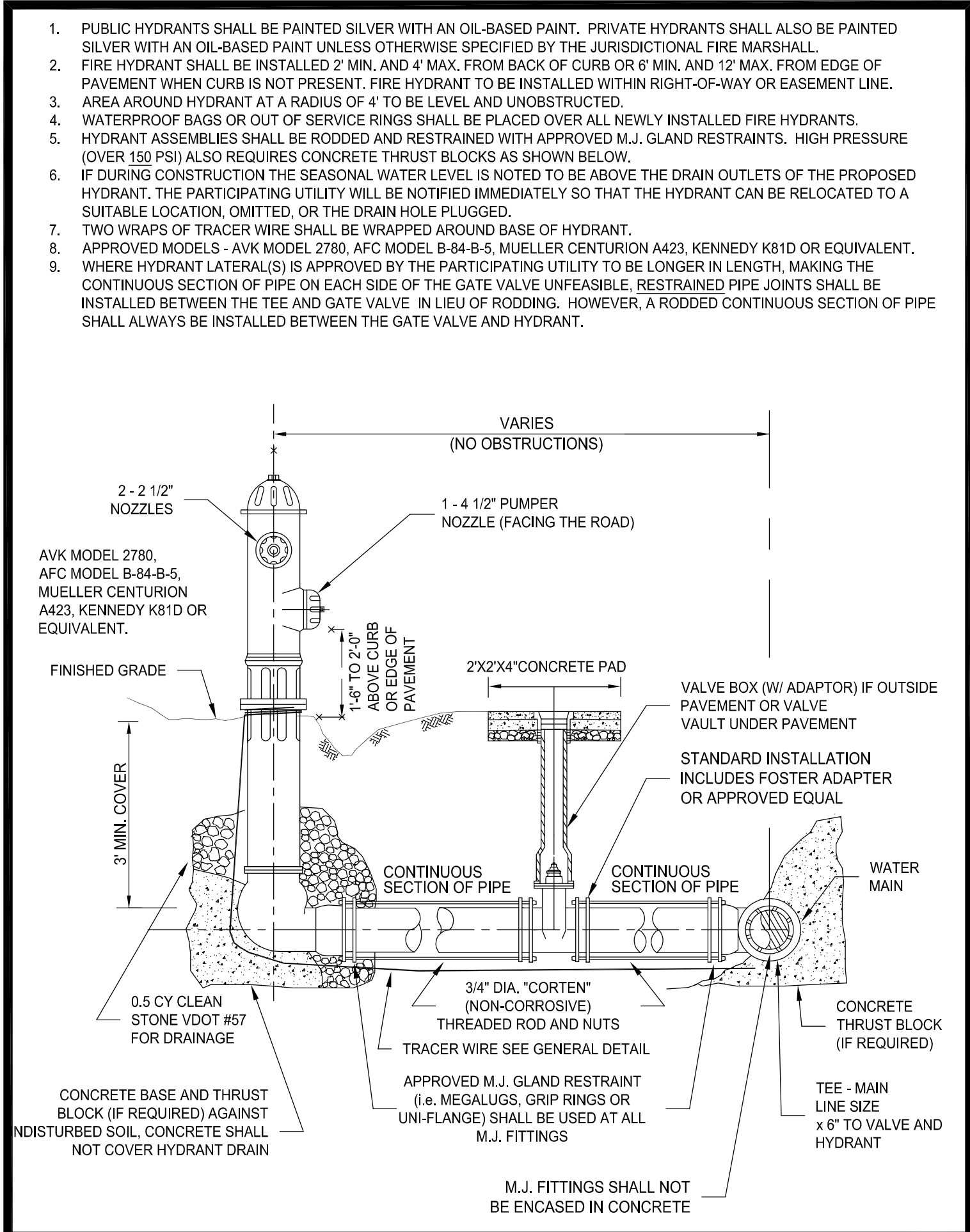
- ALL JOINTS SHALL BE RESTRAINED ON BOTH SIDES OF THE FITTING AND DOCUMENTED BY THE INSPECTOR FOR THE LENGTH SHOWN UNLESS OTHERWISE INDICATED.
- RESTRAINED LENGTH SHOWN REFERS TO ANY DESIGNED OR POTENTIAL LINE STOP, INCLUDING ALL GATE VALVES.
- RESTRAINED LENGTH SHOWN REFERS TO THE BRANCH LINE ONLY. THE CONTINUOUS PIPE LENGTH OF THE MAIN RUN SHALL BE A MINIMUM OF 10' ON EACH SIDE OF THE TEE.
- 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.
- 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.
- 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).
- 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 SPIGOT DIMENSIONS.

WESTERN VIRGINIA REGIONAL - CONSTRUCTION DETAIL

MINIMUM THRUST RESTRAINT OF PIPE JOINTS DESIGN LENGTHS

02/10/15

W-19



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Scale: As Shown
W.O. 18-0045

Designed: C.L. White
Drawn: C.L. White

Key Plan

PHASE 2

DETAILS WATER AND SANITARY SEWER

Issues and Revisions:

DATE	REVISION
10/15/2018	1ST SITE SUBMITTAL
11/09/2018	PERMIT SET
12/19/2018	CONSTRUCTION SET
04/02/2019	ADDENDUM 2

Commission No: 63132-17186

Drawn by:

Checked by:

SHEET

C15.5

1" = 30' GRAPHIC SCALE