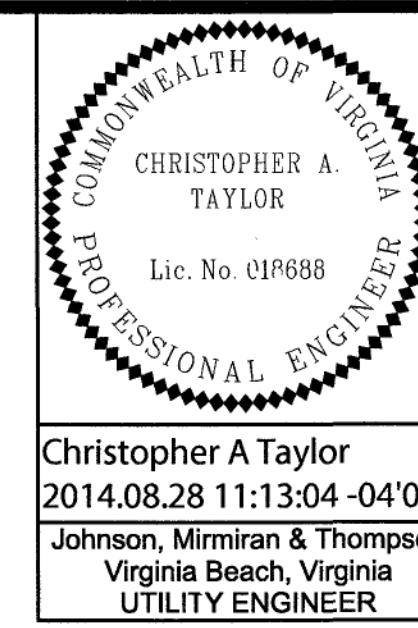


PROJECT MANAGER: Craig Moore, P.E., Salem District
SURVEYED BY: Dale Spraker, P.E., Salem Survey Party (Party 60)
DESIGN SUPERVISED BY: JOHNSON, MIRMAN & THOMPSON (804) 323-9900
DESIGNED BY: JOHNSON, MIRMAN & THOMPSON (804) 323-9900

WATER AND SANITARY SEWER GENERAL NOTES AND DETAILS



REVISED	STATE	ROUTE	PROJECT	SHEET NO.
	VA.	688	0688-080-301, RW-201, C-501	10(2)

DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT

Christopher A Taylor
2014.08.28 11:13:04 -04'00'
Johnson, Mirman & Thompson
Virginia Beach, Virginia
UTILITY ENGINEER

GENERAL NOTES

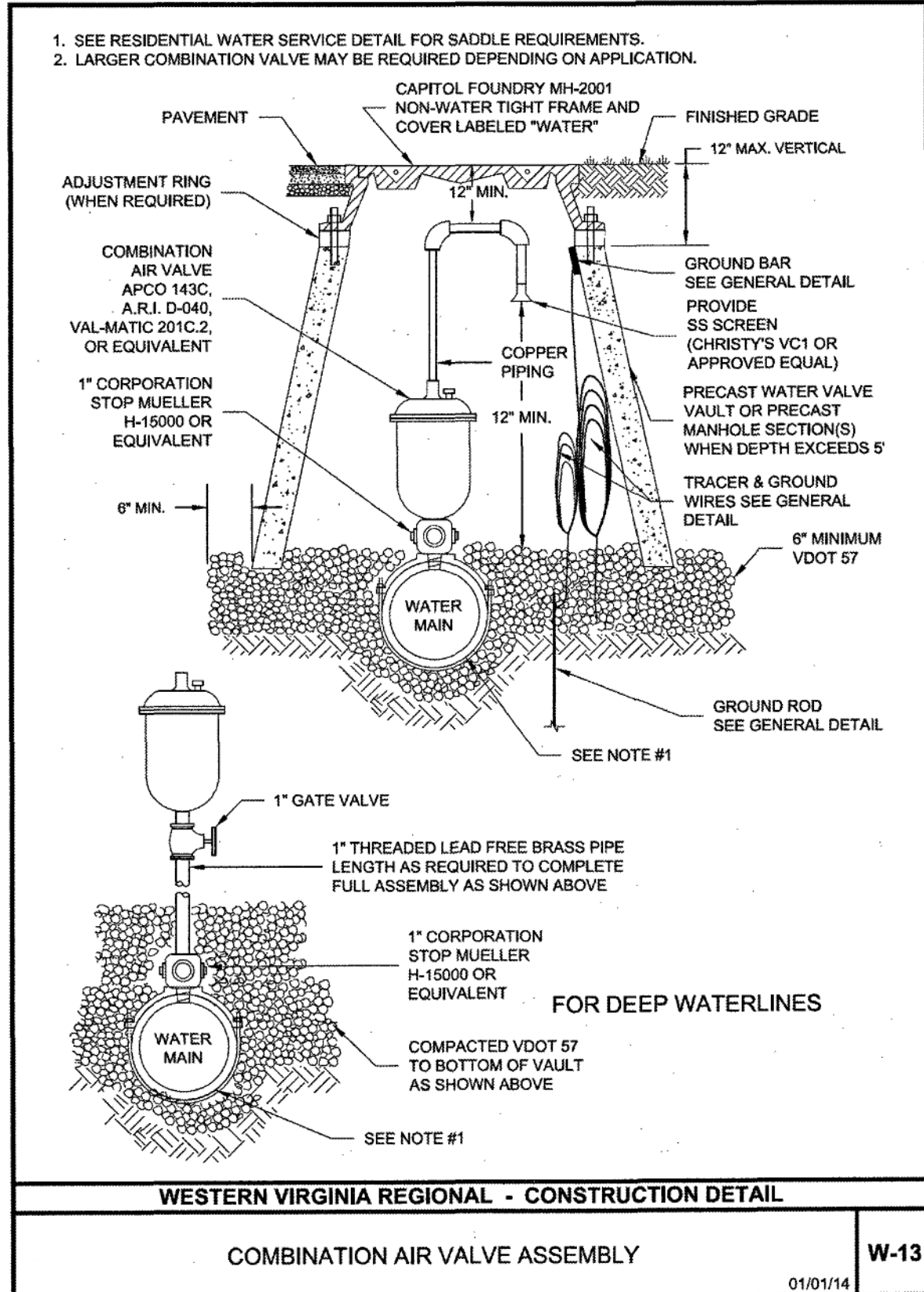
- THE LOCATION, DEPTH, MATERIAL, CONDITION AND SIZE OF EXISTING UTILITIES SHOWN ON THE UTILITY ADJUSTMENT PLANS ARE NOT GUARANTEED. FIELD VERIFY WITH TEST HOLES THE LOCATION, ELEVATION, TYPE, ROUNDNESS AND SIZE OF ALL EXISTING UNDERGROUND UTILITIES AND POINTS OF CONNECTION PRIOR TO EXCAVATION, ORDERING OF MATERIALS AND INSTALLATION FOR THIS PROJECT.
- THIS PLAN DOES NOT GUARANTEE THE EXISTENCE OR NON-EXISTENCE OF UNDERGROUND UTILITIES. PRIOR TO ANY CONSTRUCTION OR EXCAVATION, THE CONTRACTOR SHALL VERIFY THE EXISTENCE AND LOCATION OF, OR THE NON-EXISTENCE OF UNDERGROUND UTILITIES BY CONTACTING "MISS UTILITY" AT 811.
- MAINTAIN CONTINUOUS WATER AND FIRE PROTECTION SERVICE TO ALL CUSTOMERS THROUGHOUT THE DURATION OF THE PROJECT. BRIEF OUTAGES WILL BE ALLOWED FOR TRANSFER OF SERVICE FROM EXISTING TO NEW LINES FOLLOWING A 48 HOUR ADVANCED NOTICE TO, AND AUTHORIZATION BY, THE UTILITY OWNER. EXISTING WATER UTILITIES SHALL REMAIN IN PLACE AND OPERATIONAL UNTIL NEW MAINS AND SERVICES HAVE BEEN INSTALLED, TESTED, AND APPROVED BY THE APPLICABLE AUTHORITIES. PROPOSED UTILITIES NOT YET APPROVED SHALL BE CLEARLY MARKED UNTIL PLACED INTO SERVICE.
- THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PROTECT EXISTING UTILITIES AND MAINTAIN UNINTERRUPTED SERVICE. ANY DAMAGES INCURRED OR INTERRUPTION OF SERVICE SHALL BE REPORTED IMMEDIATELY TO THE UTILITY OWNER AND NECESSARY REPAIRS SHALL BE PERFORMED TO THE SATISFACTION OF THE ENGINEER.
- CONTACTS:
WESTERN VIRGINIA WATER AUTHORITY
MARK SINK (540) 537-3460
- ALL WATER AND SANITARY SEWER CONSTRUCTION AND MATERIALS SHALL CONFORM, WHERE APPLICABLE, TO THE CURRENT VIRGINIA DEPARTMENT OF TRANSPORTATION (VDOT) ROAD AND BRIDGE SPECIFICATIONS. THE CURRENT VDOT UTILITY RELOCATION POLICIES AND PROCEDURES (VOLUME 110 OF THE RIGHT-OF-WAY & UTILITIES DIVISION MANUAL OF INSTRUCTIONS), AND TO THE CURRENT EDITION OF THE WESTERN VIRGINIA REGIONAL DESIGN AND CONSTRUCTION STANDARDS.
- WATER MAIN AND SANITARY SEWER LINE CONSTRUCTION FOR THIS PROJECT, INCLUDING ALL ROAD CROSSINGS AND CASINGS, MAY BE INSTALLED VIA OPEN CUT. CONSTRUCTION OF UTILITY ROAD CROSSINGS SHALL BE COORDINATED WITH ROADWAY CONSTRUCTION, AND MAINTENANCE OF TRAFFIC (MOT) PLANS IN ORDER TO MINIMIZE DISRUPTION OF TRAFFIC.
- UNLESS OTHERWISE NOTED, A MINIMUM OF THREE (3') FEET OF COVER IS REQUIRED OVER PROPOSED WATER AND SANITARY SEWER LINES.
- ALL EXISTING UTILITIES MAY NOT BE SHOWN IN THEIR EXACT LOCATION. THE CONTRACTOR SHALL COMPLY WITH THE STATE WATERWORKS REGULATIONS, SECTION 12VAC5-590-1150 WHERE LINES CROSS.
- ALL TRENCHES IN EXISTING OR FUTURE RIGHT-OF-WAYS SHALL BE COMPACTED IN ACCORDANCE WITH VIRGINIA DEPARTMENT OF TRANSPORTATION STANDARDS.
- WATER AND SANITARY SEWER LINES SHALL BE STAKED PRIOR TO CONSTRUCTION.
- BEDDING AND BACKFILL TO BE IN ACCORDANCE WITH VDOT STANDARD UB-1.

24" WATER RELOCATION SEQUENCE OF CONSTRUCTION (STATION 110+40, 46' LT. TO STATION 113+03, 41' LT)

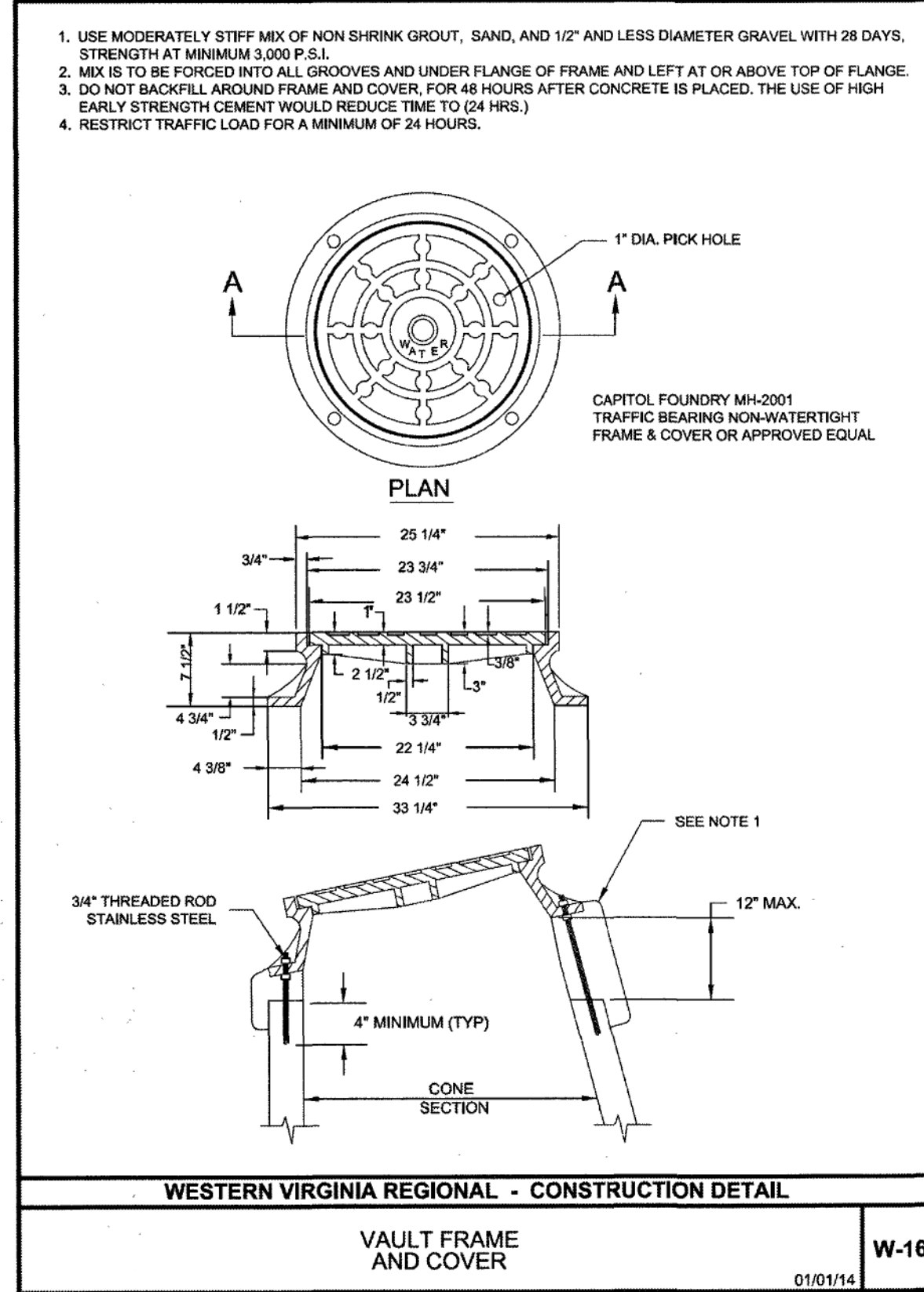
- CONSTRUCT AND TEST NEW 24" WATER MAIN AND APPURTENANCES PARALLEL WITH EXISTING 24" MAIN PRIOR TO ANY CONNECTIONS TO THE EXISTING MAIN.
- BACKFILL AND MAKE PROVISIONS AS NECESSARY TO PROVIDE ACCESS FOR FUTURE CONNECTIONS TO EXISTING 24" WATER MAIN. NO CONNECTIONS TO THE EXISTING MAIN OR OTHER DISRUPTION OF SERVICE TO THIS 24" WATER MAIN SHALL OCCUR UNTIL AUTHORIZED BY VDOT AND THE WESTERN VIRGINIA WATER AUTHORITY (WVWA).
- UPON AUTHORIZATION BY VDOT/WVWA, CONNECTIONS TO THE MAIN SHALL BE PERFORMED AS QUICKLY AS POSSIBLE IN ORDER TO MINIMIZE DISRUPTION OF WATER SERVICE.
- ABANDON PORTION OF EXISTING 24" MAIN IN PLACE AS INDICATED ON THE PLANS AND BACKFILL TO FINISHED GRADE.

8" WATER RELOCATION SEQUENCE OF CONSTRUCTION (STATION 108+92, 41' RT. TO STATION 109+40, 22' RT)

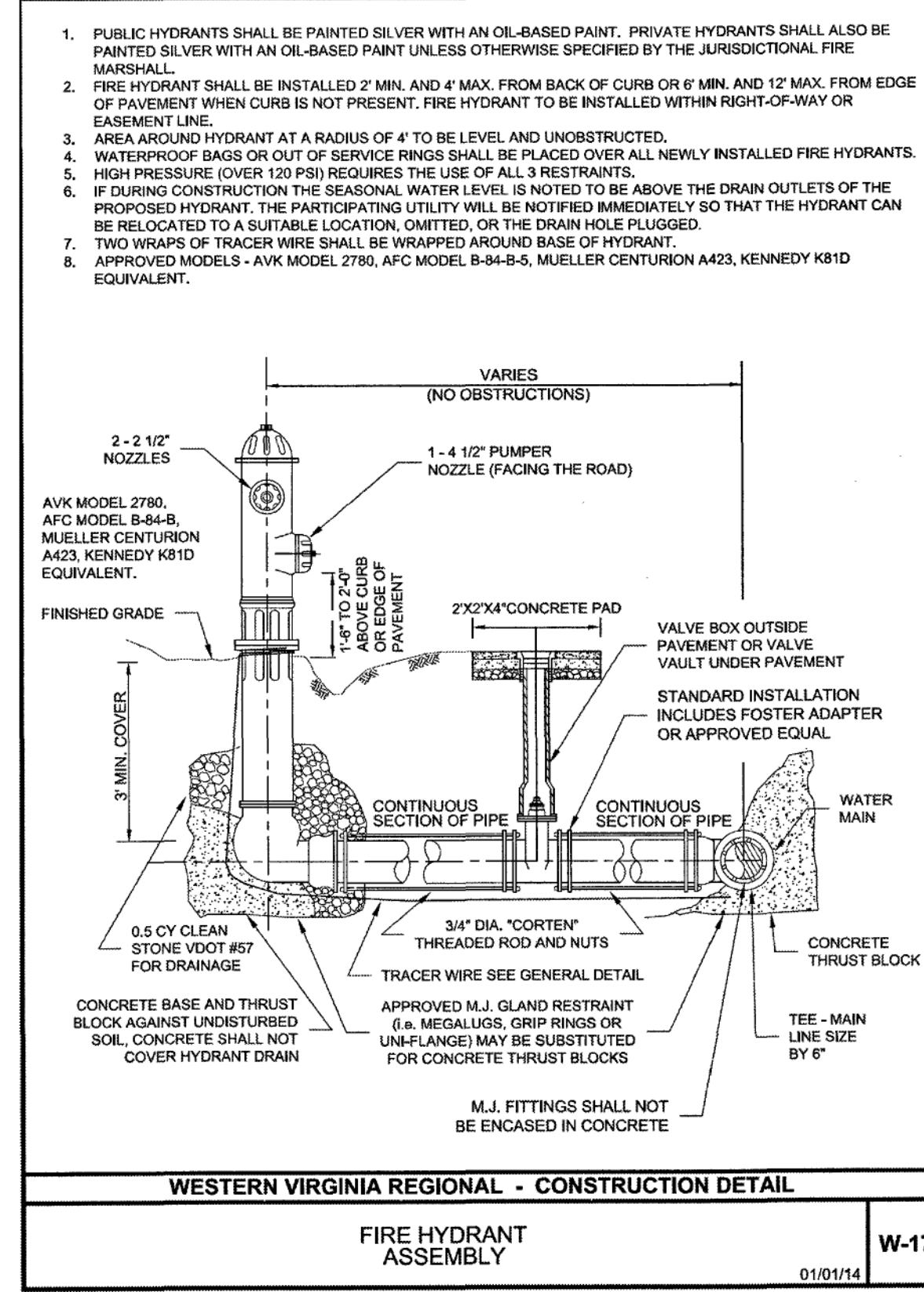
- CONSTRUCT AND TEST NEW 8" WATER MAIN AND APPURTENANCES PARALLEL WITH EXISTING 8" MAIN PRIOR TO ANY CONNECTIONS TO THE EXISTING MAIN.
- UPON AUTHORIZATION BY VDOT/WVWA, CONNECTIONS TO THE EXISTING 8" WATER MAIN SHALL BE PERFORMED AS QUICKLY AS POSSIBLE IN ORDER TO MINIMIZE DISRUPTION OF WATER SERVICE.
- ABANDON PORTION OF EXISTING 8" MAIN IN PLACE AS INDICATED ON THE PLANS AND BACKFILL TO FINISHED GRADE.



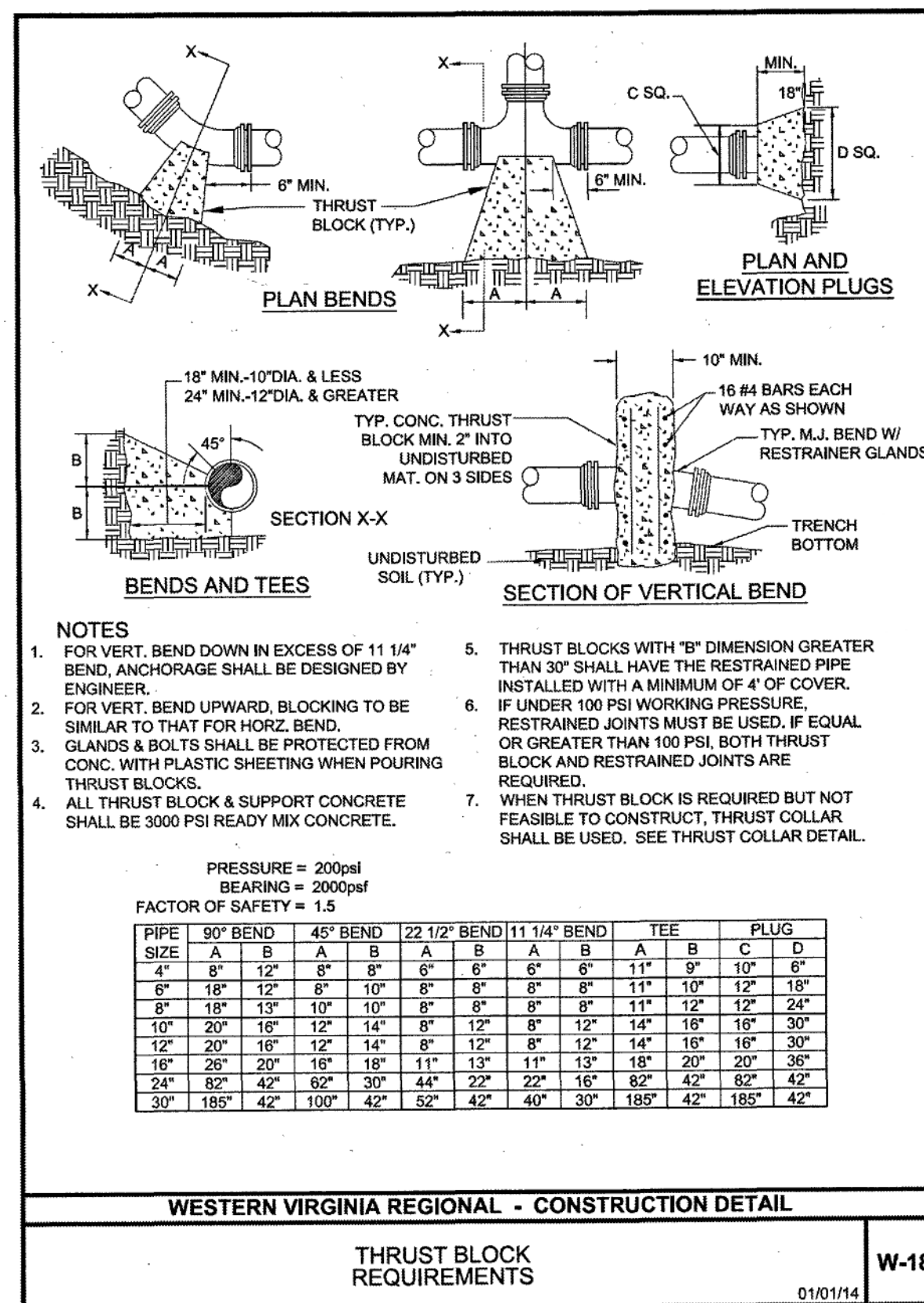
WESTERN VIRGINIA REGIONAL - CONSTRUCTION DETAIL
COMBINATION AIR VALVE ASSEMBLY
W-13
01/01/14



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



WESTERN VIRGINIA REGIONAL - CONSTRUCTION DETAIL
FIRE HYDRANT ASSEMBLY
W-17
01/01/14



WESTERN VIRGINIA REGIONAL - CONSTRUCTION DETAIL
THRUST BLOCK REQUIREMENTS
W-18
01/01/14

INSTALLATION OF DUCTILE IRON WATER MAINS
TABLE 3 AWWA C600-05
Maximum Joint Deflection Full Length of Pipe - Push on Type Joint

Nominal Pipe Size (Inches)	Deflection Angle - θ (degree)	Maximum Offset - 5" (Inches)				Approximate Radius of Curve - R" Produced by Succession of Joints			
		Joint Length 18-Foot	Joint Length 20-Foot	Joint Length 22-Foot	Joint Length 24-Foot	Joint Length 18-Foot	Joint Length 20-Foot	Joint Length 22-Foot	Joint Length 24-Foot
3	5°	19	21	205	230				
4	5°	19	21	205	230				
6	5°	19	21	205	230				
8	5°	19	21	205	230				
10	5°	19	21	205	230				
12	5°	19	21	205	230				
14	3°	11	12	340	360				
16	3°	11	12	340	360				
18	3°	11	12	340	360				
20	3°	11	12	340	360				
24	3°	11	12	340	360				
30	3°	11	12	340	360				

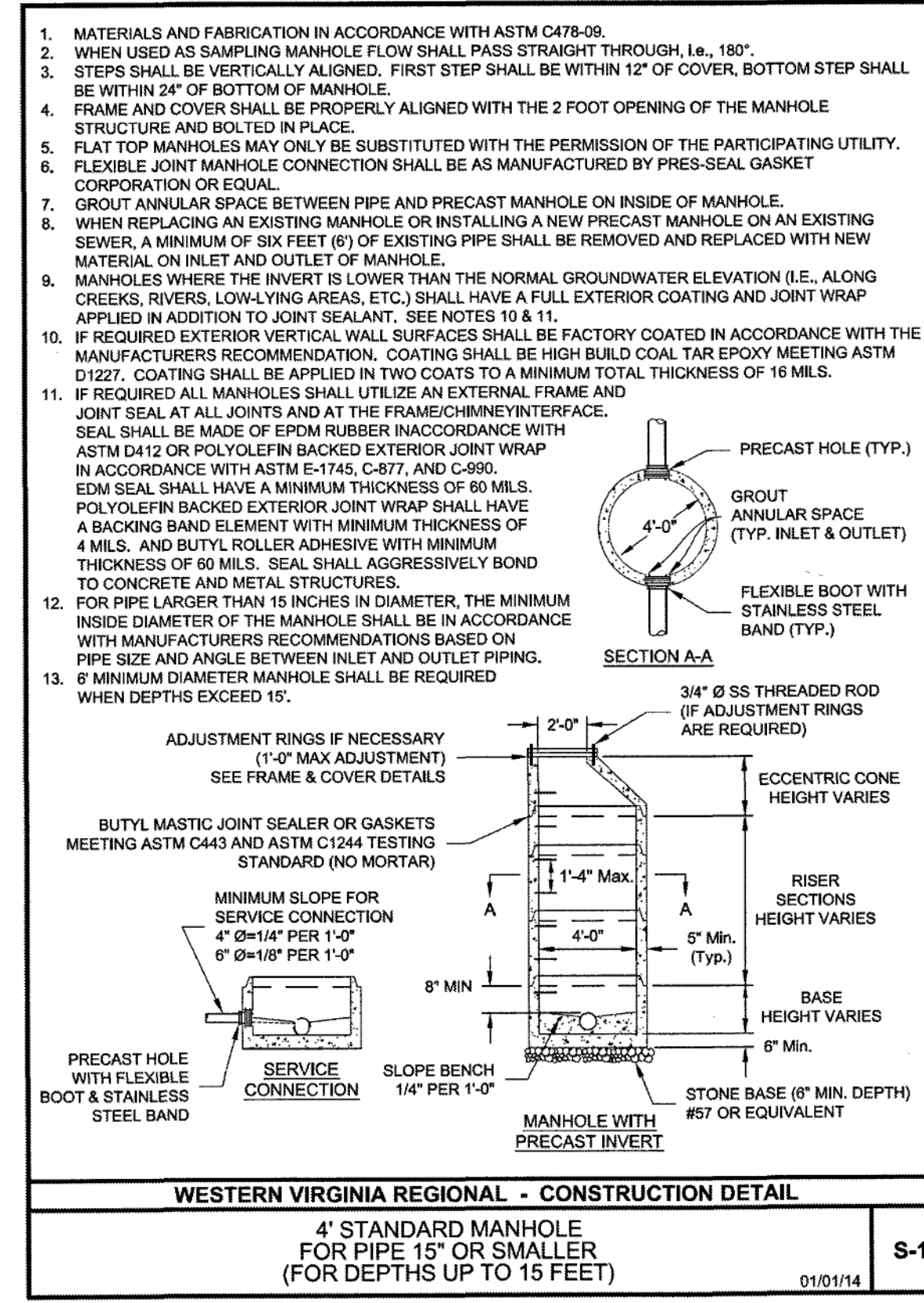
* SEE FIGURE 4.
For 14-inch and larger push-on joints, maximum deflection angle may be larger than shown above. Consult the manufacturer.

INSTALLATION OF DUCTILE IRON WATER MAINS
TABLE 4 AWWA C600-05
Maximum Joint Deflection Full Length of Pipe - Mechanical Joint

Nominal Pipe Size (Inches)	Deflection Angle - θ (degree)	Maximum Offset - 5" (Inches)				Approximate Radius of Curve - R" Produced by Succession of Joints			
		Joint Length 18-Foot	Joint Length 20-Foot	Joint Length 22-Foot	Joint Length 24-Foot	Joint Length 18-Foot	Joint Length 20-Foot	Joint Length 22-Foot	Joint Length 24-Foot
3	8°-18°	31	35	125	140				
4	8°-18°	31	35	125	140				
6	7°-07°	27	30	145	160				
8	5°-21°	20	22	195	220				
10	5°-21°	20	22	195	220				
12	5°-21°	20	22	195	220				
14	3°-36°	13.5	15	265	320				
16	3°-36°	13.5	15	265	320				
18	3°-00°	11	12	340	360				
20	3°-00°	11	12	340	360				
24	2°-23°	9	10	450	500				

* SEE FIGURE 4.

WESTERN VIRGINIA REGIONAL - CONSTRUCTION DETAIL
DUCTILE IRON PIPE DEFLECTION ALLOWANCE TABLES
W-22
01/01/14



WESTERN VIRGINIA REGIONAL - CONSTRUCTION DETAIL
4" STANDARD MANHOLE FOR PIPE 15" OR SMALLER (FOR DEPTHS UP TO 15 FEET)
S-1
01/01/14