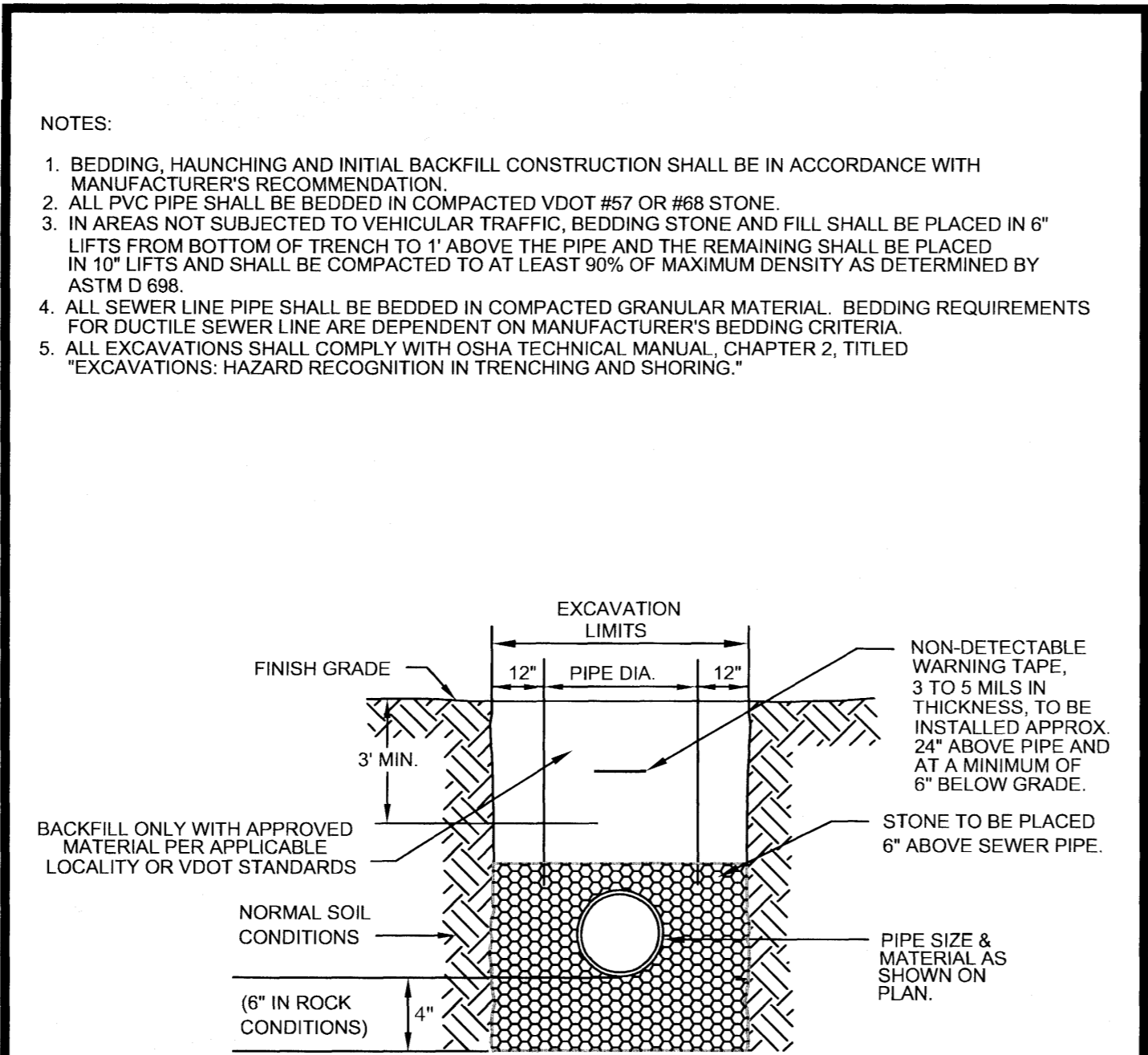
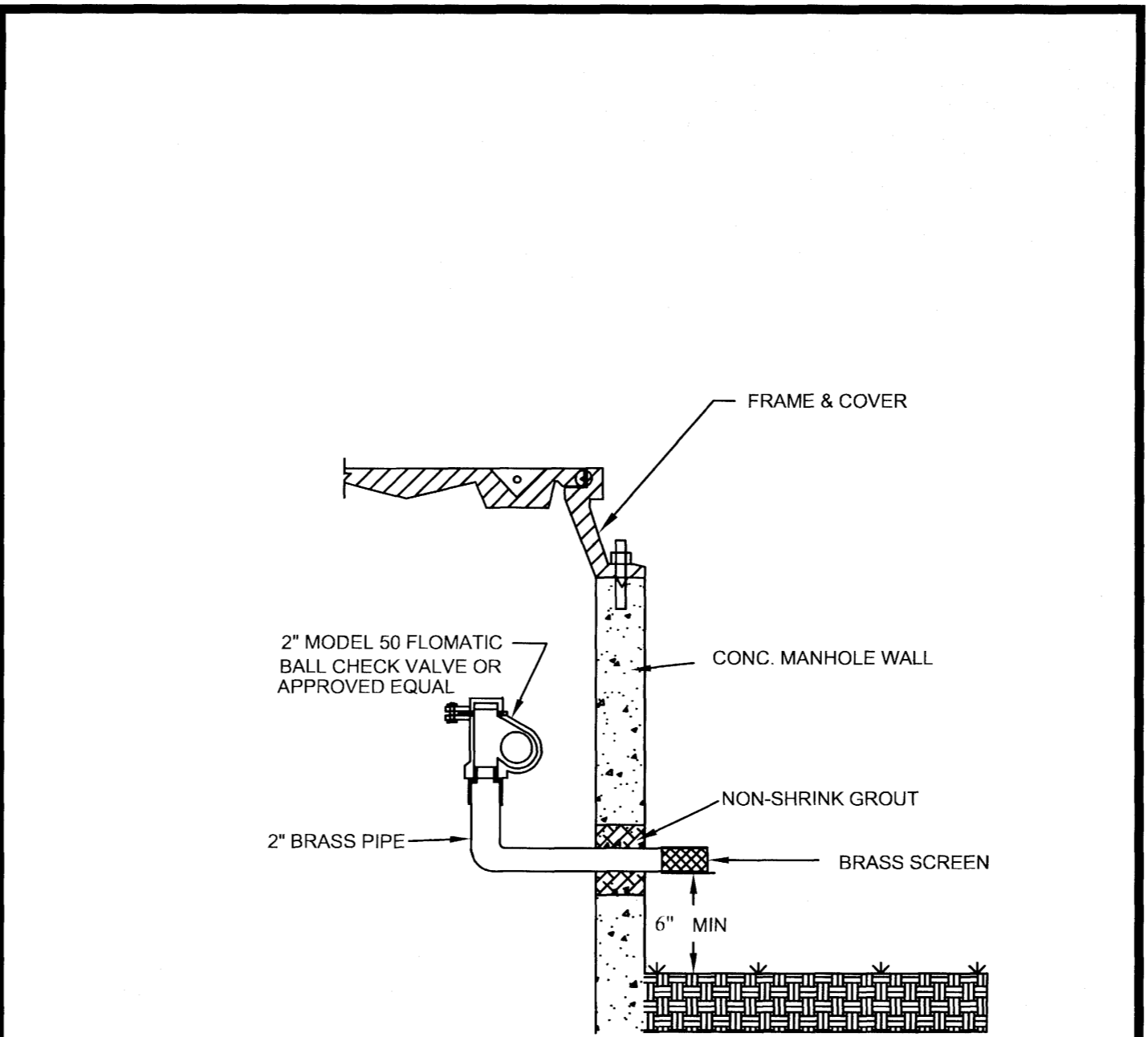


- NOTES:
- BEDDING, HAUNCHING AND INITIAL BACKFILL CONSTRUCTION SHALL BE IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATION.
 - ALL PVC PIPE SHALL BE BEDDED IN COMPACTED VDOT #57 OR #68 STONE.
 - IN ROANOKE COUNTY, THE CONTRACTOR SHALL REPLACE THE OPEN CUT WITH A MINIMUM TOP COURSE OF 1.5" (MINIMUM) VDOT SM-9.5A, BASE COURSE OF 6" VDOT BM-25d, AND SUBBASE OF 10" VDOT 21B, OR AS REQUIRED BY VDOT. IN ROANOKE CITY, CONTRACTOR SHALL REPLACE PAVEMENT AS REQUIRED BY CITY OF ROANOKE RIGHT OF WAY EXCAVATION AND RESTORATION STANDARDS.
 - ALL CONSTRUCTION WITHIN THE PUBLIC RIGHT-OF-WAY SHALL BE AS SPECIFIED BY VDOT OR APPLICABLE LOCALITY.
 - PRIOR TO CONSTRUCTION, CONTRACTOR IS RESPONSIBLE FOR SECURING ALL REQUIRED PERMITS FROM VDOT AND/OR APPLICABLE LOCALITY.
 - IN AREAS SUBJECT TO VEHICULAR TRAFFIC, BEDDING STONE AND FILL SHALL BE PLACED IN 6" LIFTS AND SHALL BE COMPACTED TO AT LEAST 95% OF MAXIMUM DENSITY AS DETERMINED BY ASTM D 698.
 - ALL SEWER LINE PIPE SHALL BE BEDDED IN COMPACTED GRANULAR MATERIAL. BEDDING REQUIREMENTS FOR DUCTILE SEWER LINE ARE DEPENDENT ON MANUFACTURER'S BEDDING CRITERIA.
 - BENCHCUT ON EACH SIDE OF PAVEMENT, CITY OF ROANOKE EQUALS 12". VDOT RIGHT-OF-WAY EQUALS 6".
 - ALL EXCAVATIONS SHALL COMPLY WITH OSHA TECHNICAL MANUAL, CHAPTER 2, TITLED "EXCAVATIONS: HAZARD RECOGNITION IN TRENCHING AND SHORING."

WESTERN VIRGINIA WATER AUTHORITY - CONSTRUCTION STANDARDS			
REVISION DATE		BEDDING AND BACKFILL UNDER PAVEMENT AND RIGHT-OF-WAY	S-31
07/01/04			
03/01/06			



WESTERN VIRGINIA WATER AUTHORITY - CONSTRUCTION STANDARDS			
REVISION DATE		BEDDING AND BACKFILL OUTSIDE OF PAVED AREAS	S-30
07/01/04			
03/01/06			



WESTERN VIRGINIA WATER AUTHORITY - CONSTRUCTION STANDARDS			
REVISION DATE		TYPE 1 MANHOLE VENT OUT OF RIGHT OF WAY	S-19
07/01/04			
03/01/06			

EQUIVALENT PSI	HEIGHT OF GROUND WATER ABOVE PIPE INV. (Ft.)
0.43	1
0.87	2
1.30	3
1.73	4
2.17	5
2.60	6
3.03	7
3.47	8
3.90	9
4.34	10
4.77	11
4.98	11.5
For anything above 11.5 VF, allow maximum 5.0 PSI.	

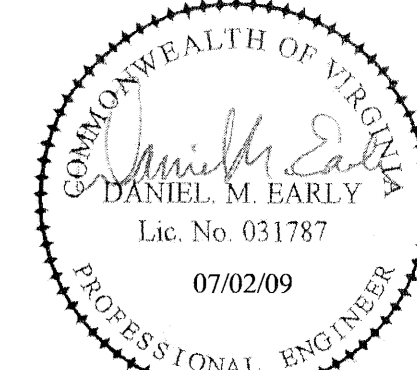
- NOTES:
- Table based on 1.0 v.f. of water = 0.4335 PSI.
 - The appropriate PSI allowance for average vertical foot of ground water shall be added to the base starting pressure of 4.0 PSI, but in no CASE shall the resulting pressure be more than 9.0 PSI.
 - Interpolate for fractions of a foot of water.

WESTERN VIRGINIA WATER AUTHORITY - CONSTRUCTION STANDARDS			
REVISION DATE		AIR TESTING BACK PRESSURE EQUIVALENCY TABLE	S-26
07/01/04			

Pipe Diameter (in.)	Min. Time (min:sec)	Length (ft.)	Time for Longer Length (min:sec)	Specified Time for Length (L) Shown (min:sec)									
				100 ft.	150 ft.	200 ft.	250 ft.	300 ft.	350 ft.	400 ft.	450 ft.		
4	3:46	597	380 L	3:46	3:46	3:46	3:46	3:46	3:46	3:46	3:46		
6	5:40	398	854 L	5:40	5:40	5:40	5:40	5:40	5:40	5:40	5:40		
8	7:34	296	1,520 L	7:34	7:34	7:34	7:34	7:34	7:34	7:34	7:34		
10	9:26	239	2,374 L	9:26	9:26	9:26	9:26	9:26	9:26	9:26	9:26		
12	11:20	199	3,418 L	11:20	11:20	11:20	11:20	11:20	11:20	11:20	11:20		
15	14:10	159	5,342 L	14:10	14:10	14:10	14:10	14:10	14:10	14:10	14:10		
18	17:00	133	7,692 L	17:00	17:00	17:00	17:00	17:00	17:00	17:00	17:00		
21	19:50	114	10,470 L	19:50	19:50	19:50	19:50	19:50	19:50	19:50	19:50		
24	22:40	99	13,674 L	22:47	22:47	22:47	22:47	22:47	22:47	22:47	22:47		
27	25:30	88	17,306 L	28:51	28:51	28:51	28:51	28:51	28:51	28:51	28:51		
30	28:20	80	21,366 L	35:37	35:37	35:37	35:37	35:37	35:37	35:37	35:37		
33	31:10	72	25,852 L	43:05	43:05	43:05	43:05	43:05	43:05	43:05	43:05		
36	34:00	66	30,768 L	51:17	51:17	51:17	51:17	51:17	51:17	51:17	51:17		

- Notes:
- Ductile iron pipe - test shall be in accordance with ASTM C924 and C828.
 - PVC and PE pipe - test shall be in accordance with ASTM F1417-92(2005).

WESTERN VIRGINIA WATER AUTHORITY - CONSTRUCTION STANDARDS			
REVISION DATE		MINIMUM SPECIFIED TIME REQUIRED FOR A 1.0 PSIG PRESSURE DROP FOR SIZE AND LENGTH OF PIPE INDICATED FOR Q=0.0015	S-27
07/01/04			
03/01/06			



ACS DESIGN
 ENGINEERING • SURVEYING
 LANDSCAPE ARCHITECTURE
 CONSTRUCTION MANAGEMENT

2203 PETERS CREEK ROAD
 ROANOKE, VIRGINIA 24017
 P 540.562.2345 F 562.2344
 INFO@ACSDSIGNLLC.COM
 WWW.ACSDSIGNLLC.COM

Westlake Sewer Extension
Western Virginia Water Authority
Franklin County, Virginia

© ACS DESIGN, LLC - Material included herein is covered by copyright. Use of this work in whole or in part is strictly forbidden without the expressed written consent of ACS DESIGN, LLC.

DRAWN BY: JSH
 DESIGNED BY: DMED
 CHECKED BY: DME
 DATE: 02 JULY 2009
 JOB NUMBER: 09012

REVISIONS:
No. 1
No. 2
No. 3
No. 4

SHEET NO.:
C3.9

Standard Sewer
 Details