

### WATER AND SANITARY MATERIAL SPECIFICATIONS

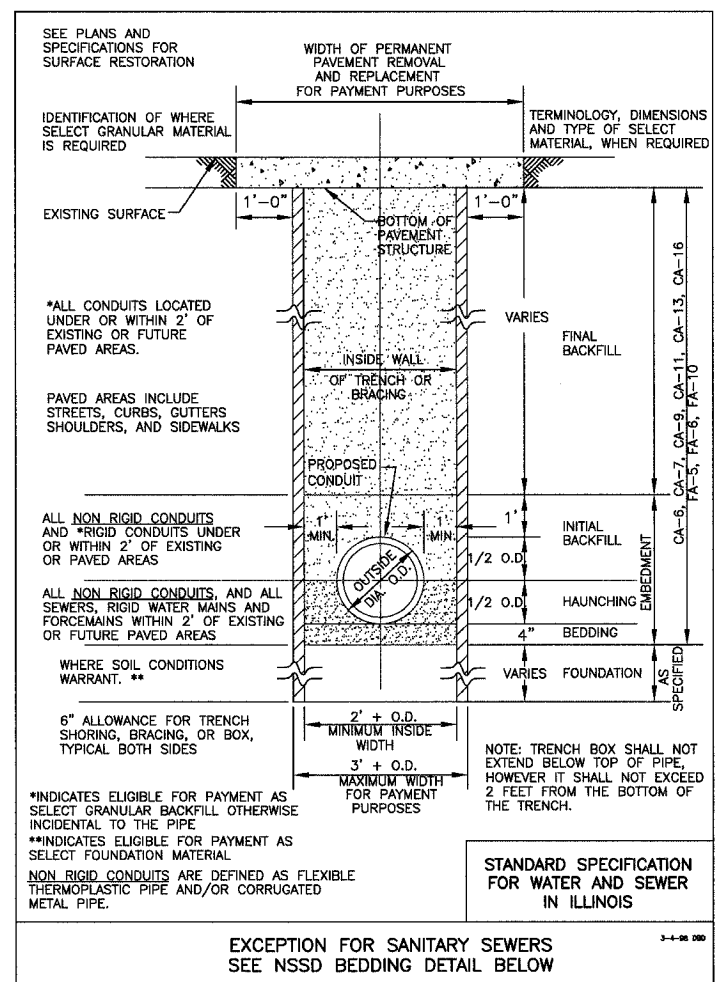
**WATERMAIN AND FIRE SERVICE:**  
 DUCTILE IRON PIPE, CLASS 52, CONFORMING TO ANSI A21.51 WITH RUBBER GASKET PUSH-ON JOINTS CONFORMING TO ANSI A21.11. ALL FITTINGS SHALL CONFORM TO ANSI A21.10/AWWA C110.

**WATER SERVICE:**  
 TYPE K COPPER OR  
 DUCTILE IRON PIPE, CLASS 52, CONFORMING TO ANSI A21.51 WITH RUBBER GASKET PUSH-ON JOINTS CONFORMING TO ANSI A21.11. ALL FITTINGS SHALL CONFORM TO ANSI A21.10/AWWA C110.

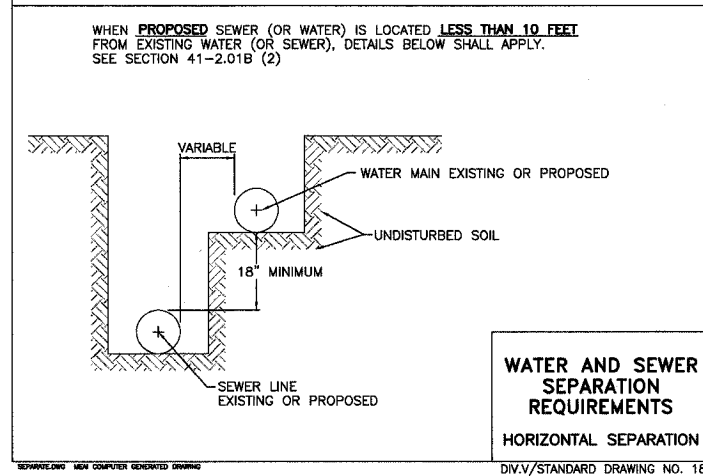
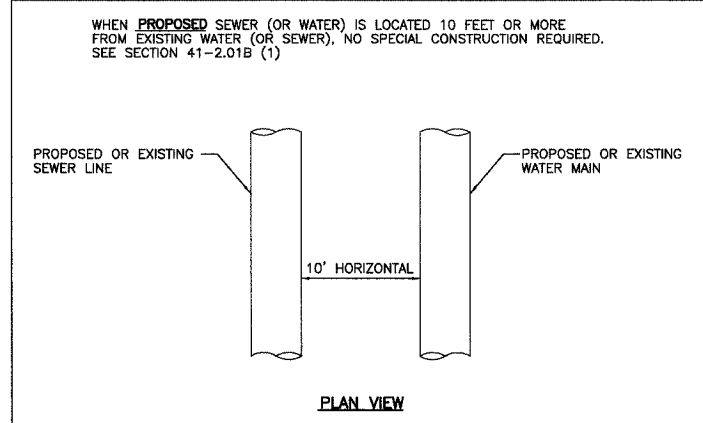
**SANITARY SEWER:**  
 POLYVINYL CHLORIDE (PVC) SEWER PIPE SHALL CONFORM TO ASTM DESIGNATION D-3034 WITH AN SDR OF 26, WITH ELASTOMERIC GASKET JOINTS CONFORMING TO:  
 ASTM D3212-96a Standard Specification for Joints for Drain and Sewer Plastic Pipes Using Flexible Elastomeric Seals  
 ASTM F477-02e1 Standard Specification for Elastomeric Seals (Gaskets) for Joining Plastic Pipe

**SANITARY SERVICE:**  
 WATERMAIN CLASS PIPE: POLYVINYL CHLORIDE (PVC) SDR 21  
 SEWER PIPE SHALL CONFORM TO:  
 D2241-04a Standard Specification for Poly(Vinyl Chloride) (PVC) Pressure-Rated Pipe (SDR Series)  
 D3139-98 Standard Specification for Joints for Plastic Pressure Pipes Using Flexible Elastomeric Seals

**TESTING NOTES:**  
 1. MANHOLE LEAKAGE TESTS SHALL BE IN ACCORDANCE WITH ASTM C969-02 Standard Practice for Infiltration and Exfiltration Acceptance Testing of Installed Precast Concrete Pipe Sewer Lines  
 OR  
 ASTM C1244-02e1 Standard Test Method for Concrete Sewer Manholes by the Negative Air Pressure (Vacuum) Test Prior to Backfill  
 2. INFILTRATION, EXFILTRATION, AIR EXFILTRATION AND DEFLECTION TESTING SHALL BE DONE IN ACCORDANCE WITH SECTION 31-1.11 OF THE STANDARD SPECIFICATIONS FOR WATER AND SEWER MAIN CONSTRUCTION IN ILLINOIS

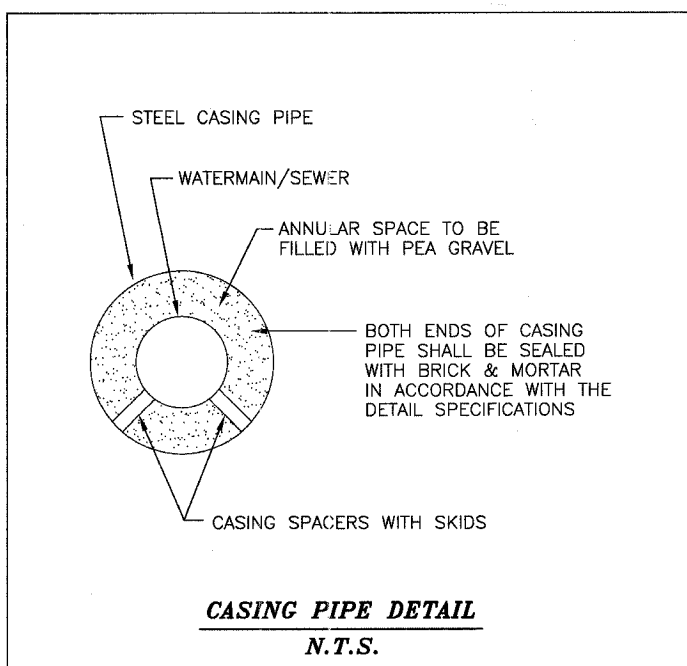
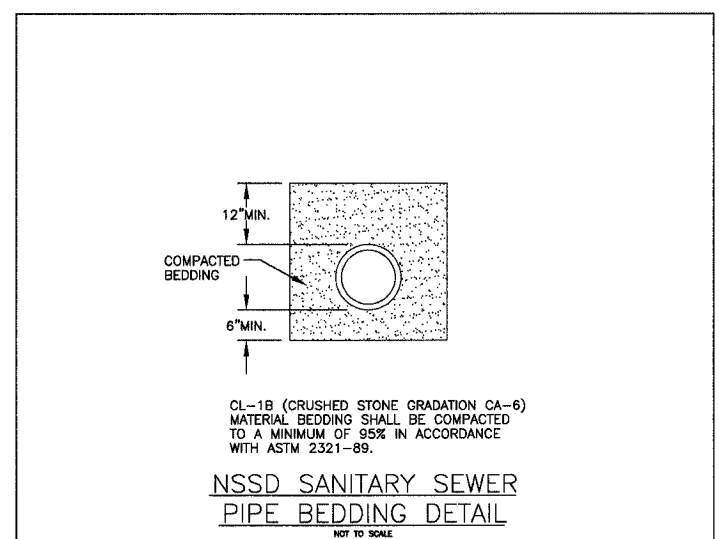


INSIDE DIAMETER OF CONDUIT IN INCHES	MAXIMUM TRENCH WIDTH IN FEET FOR PAYMENT	BEDDING C.Y./FOOT WHERE ELIGIBLE FOR PAYMENT	HAUNCHING C.Y./FOOT WHERE ELIGIBLE FOR PAYMENT	INITIAL BACKFILL C.Y./FOOT WHERE ELIGIBLE FOR PAYMENT	FINAL BACKFILL C.Y./FOOT WHERE ELIGIBLE FOR PAYMENT	PERMANENT REMOVAL AND REPLACEMENT C.Y./FOOT
6	3.58	0.04	0.03	0.17	0.13	0.62
8	3.78	0.05	0.05	0.19	0.14	0.64
10	3.97	0.05	0.06	0.20	0.15	0.66
12	4.17	0.05	0.07	0.22	0.15	0.69
14	4.36	0.05	0.08	0.24	0.16	0.71
15	4.46	0.06	0.09	0.25	0.17	0.72
16	4.56	0.06	0.10	0.26	0.17	0.73
18	4.75	0.06	0.11	0.29	0.18	0.75
20	4.94	0.06	0.12	0.31	0.18	0.77
21	5.04	0.06	0.13	0.32	0.19	0.78
24	5.33	0.07	0.15	0.35	0.20	0.81
27	5.63	0.07	0.17	0.38	0.21	0.85
28	5.72	0.07	0.18	0.39	0.21	0.86
30	5.92	0.07	0.20	0.41	0.22	0.88
33	6.21	0.08	0.22	0.45	0.23	0.91
36	6.50	0.08	0.24	0.48	0.24	0.94
42	7.08	0.09	0.29	0.56	0.26	1.01
48	7.67	0.09	0.35	0.63	0.28	1.07
54	8.25	0.10	0.40	0.71	0.31	1.14
60	8.83	0.11	0.46	0.79	0.33	1.20
66	9.42	0.12	0.52	0.87	0.35	1.27
72	10.00	0.12	0.58	0.95	0.37	1.33
78	10.58	0.13	0.65	1.04	0.39	1.40
84	11.17	0.14	0.72	1.13	0.41	1.46
90	11.75	0.15	0.79	1.23	0.44	1.53
96	12.33	0.15	0.86	1.32	0.46	1.59
102	12.92	0.16	0.94	1.42	0.48	1.66
108	13.50	0.17	1.02	1.52	0.50	1.72
120	14.67	0.18	1.19	1.73	0.52	1.85



### NORTH SHORE SANITARY DISTRICT NOTES:

1. THE CONTRACTOR SHALL NOTIFY THE NORTH SHORE SANITARY DISTRICT A MINIMUM OF 24 HOURS PRIOR TO THE START OF CONSTRUCTION EITHER BY PHONE AT 847-623-6060 OR BY EMAIL AT [engmail@northshoresanitary.org](mailto:engmail@northshoresanitary.org).
2. ALL SANITARY SEWER PIPE SHALL BE BEDDED, WITH A MINIMUM OF 6" BELOW THE PIPE AND 12" ABOVE THE PIPE, IN CA-6 CRUSHED MATERIAL. CA-7 MAY BE ALLOWED AT THE DISCRETION OF THE NORTH SHORE SANITARY DISTRICT IF EXTREMELY WET CONDITIONS ARE ENCOUNTERED.
3. THE CONNECTION TO DOWNSTREAM SEWERS SHALL BE PLUGGED WITH A WATER TIGHT CONCRETE PLUG AND MAINTAINED IN PLACE UNTIL CONNECTION IS APPROVED BY THE NORTH SHORE SANITARY DISTRICT.
4. (IF APPLICABLE) ALL SANITARY SEWER EXTENSIONS SHALL BE TELEVISED IN THE PRESENCE OF NORTH SHORE SANITARY DISTRICT PERSONNEL AFTER HAVING NOTIFIED THE DISTRICT A MINIMUM OF 24 HOURS PRIOR TO TELEVISION EITHER BY PHONE AT 847-623-6060 OR BY EMAIL AT [engmail@northshoresanitary.org](mailto:engmail@northshoresanitary.org). A COPY OF THE TELEVISED SEWER EXTENSION, IN VHS OR DVD FORMAT, SHALL BE SUBMITTED TO THE DISTRICT FOR APPROVAL.



CASING PIPE MATERIAL: ASTM A53 GRADE "B" STEEL  
 DIAMETER: SEE BELOW  
 WALL THICKNESS: 0.375 INCHES, MINIMUM  
 YIELD STRENGTH: 35,000 PSI, MINIMUM  
 COATING: GALVANIZED PAINT  
 JOINTS: WELDED, LEAK PROOF, CAPABLE OF WITHSTANDING HIGHWAY LOADINGS  
 CASING SPACERS: MODEL CCS STAINLESS STEEL AS MANUFACTURED BY CASCADE WATERWORKS MANUFACTURING CO.  
 SPACING:  
 a. AT EACH SPIGOT END OF EACH PIPE NEXT TO THE BELL END OF THE ADJACENT PIPE AFTER THE JOINT IS FULLY ASSEMBLED  
 b. NOT MORE THAN SIX FEET ON CENTER ALONG THE LENGTH OF THE PIPE  
 c. WITHIN TWO FEET OF EACH END OF THE CASING PIPE.

WATERMAIN/SEWER	STEEL CASING PIPE
6"	12"
8"	16"
10"	18"
12"	20"
16"	24"