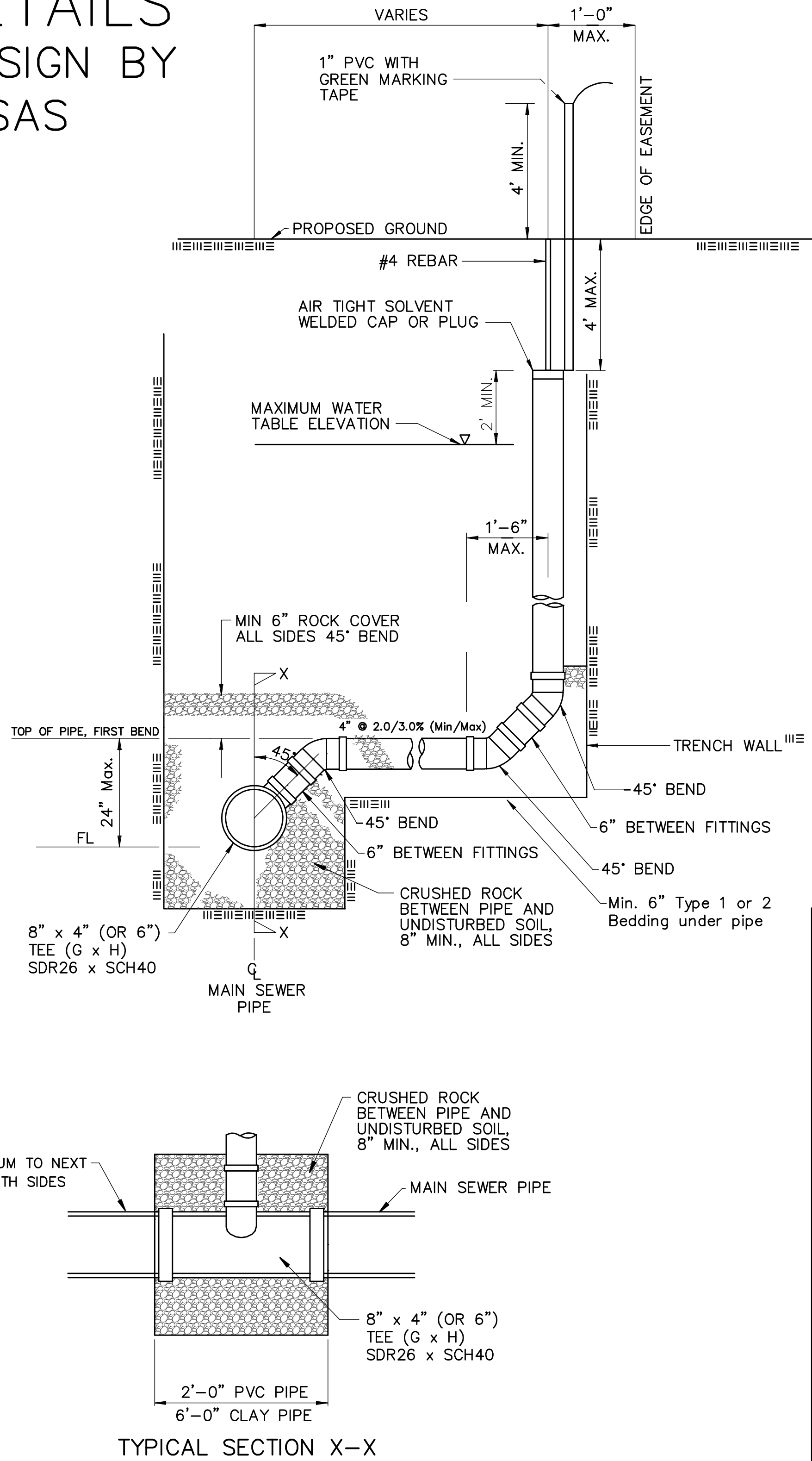
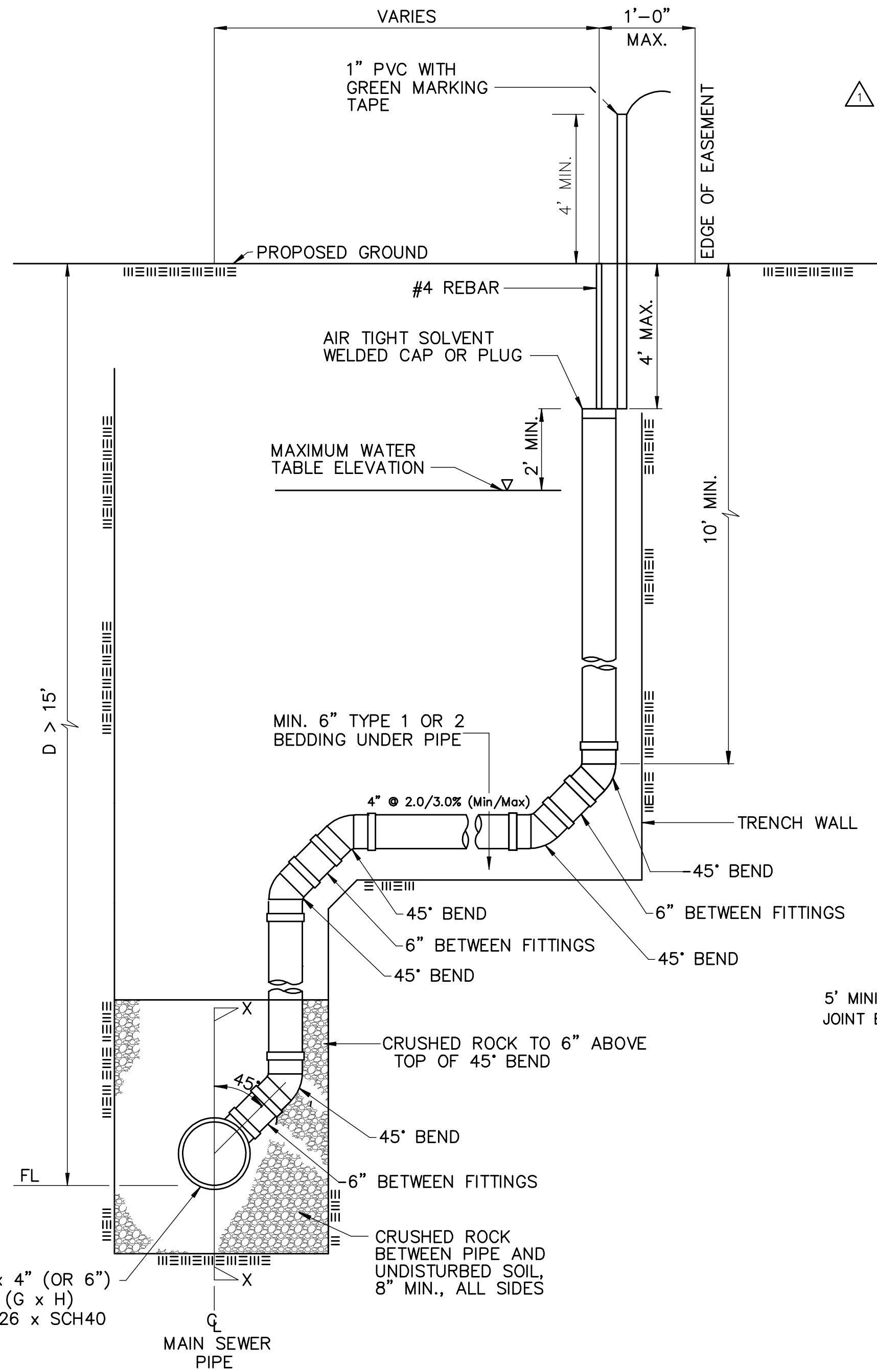


VERTICAL RISER DETAILS ADOPTED AS STANDARD DESIGN BY CITY OF WICHITA, KANSAS AUGUST 2007



= CRUSHED ROCK *
 = UNDISTURBED SOIL

* CRUSHED ROCK USED FOR ENCASEMENT AND BEDDING SHALL CONFORM TO ASTM C-33, GRADATION NO. 67, AND SHALL MEET ALL REQUIREMENTS FOR PORTLAND CEMENT CONCRETE PAVEMENT COARSE AGGREGATE, SECTION 406.2, CITY OF WICHITA STANDARD SPECIFICATIONS. ALL CRUSHED ROCK FOR BEDDING AND ENCASEMENT SHALL EXTEND TO THE LIMITS OF THE MANHOLE EXCAVATION.

NOTE: RISER PIPE REQUIREMENTS AT MANHOLE STUBS SHALL BE SIMILAR TO THOSE SHOWN ABOVE.

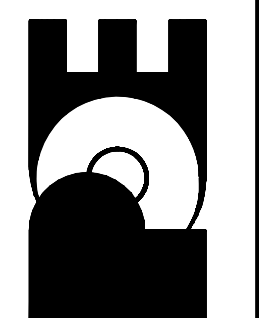
GENERAL NOTES

- RISERS.** Risers shall be installed to serve all lots or tracts where the sanitary sewer main is below the water table. Risers shall also be installed to serve all lots and tracts where the sanitary sewer main depth is greater than 12 feet below the proposed ground elevation. Installation of risers because of field conditions shall be as approved by the Construction Engineer. The location of the risers to serve developed property shall be approved by the property owner and the Construction Engineer.
- PIPE STUBS.** Pipe stubs shall be installed in manholes where locations of manholes will provide satisfactory service connection as determined by the Construction Engineer. The vertical distance between the flowline of the manhole pipe stub and the flowline of the sanitary sewer main out of the manhole shall not exceed 2 feet. Risers shall be utilized at manhole pipe stubs as indicated in Note 1. Manhole pipe stubs shall be set such that the top of the stub is not lower than the top of the sanitary sewer main.
- SIZING.** Pipe stubs and risers shall be sized according to the plans and riser table where risers are indicated by the plans. Where risers or pipe stubs are required because of field conditions, the risers and stubs shall be six-inch diameter for commercial or industrial properties and 4" or 6" diameter for residential properties, based on lot size and sanitary sewer main depth. Sizing of risers and stubs must be approved by the Construction Engineer prior to installation.
- RISER OR STUB MATERIAL.** Risers and stubs shall be constructed of Schedule 40 PVC Pipe, meeting the requirements of the latest revision of A.S.T.M. All pipe joints, on the riser itself, shall be solvent welded. The 8" x 4" or 8" x 6" full body tee shall be SDR 26 PVC pipe, gasket x solvent weld.
- ROCK ENCASEMENT.** Riser connections to clay pipe sanitary sewers shall be rock encased both ways from the riser centerline. The rock encasement shall extend three feet from the riser centerline or stop at the first sanitary sewer pipe joint within three feet of the riser centerline. Riser connections to PVC Sanitary Sewer mains shall be rock encased one foot each way from the riser centerline. Crushed rock shall conform to ASTM C-33, Gradation No. 67, and shall meet all requirements for Portland Cement Concrete Pavement Coarse Aggregate, Section 406.2, City of Wichita Standard Specifications.
- BEDDING.** Beyond the limits of the rock encasement, bedding around the sanitary sewer riser shall be compacted Pipe Bedding Type 1 or 2. The bedding shall be placed and compacted from the depth of the sanitary sewer main to the top of the sanitary sewer riser pipe. Compacted Pipe Bedding Type 1 or 2 shall be required for all risers whether constructed in vertical wall or sloped wall trenches. Bedding material and construction practices shall be approved by the Construction Engineer prior to installation.
- SUPPORT OF RISERS.** Sanitary sewer riser pipe shall be supported during trench backfill. The riser pipe shall be held in a vertical position at all times until trench backfill and compaction has been completed. Contractor's methods for supporting and backfilling the riser pipe shall be approved by the Construction Engineer.
- PLUGGING.** The ends of the riser pipes and manhole stubs shall be plugged using an airtight solvent welded cap or plug. Cap or plug fittings shall be approved by the Construction Engineer prior to installation. Caps or plugs which do not provide an airtight seal will not be accepted.
- TOP OF THE RISER PIPE.** The top elevation of the sanitary sewer riser pipe shall be built per plan elevations, unless otherwise directed by the Construction Engineer. Where riser elevations are not shown on the plans, the top of the risers shall be set at an elevation four feet below the proposed ground surface. If ground water is encountered, the top of the riser pipe shall be set at an elevation two feet (min.) above the maximum water table elevation, regardless of the riser elevation shown on the plans.
- MARKING.** Locations of the ends of the sanitary sewer riser pipe shall be marked by installing 1" PVC from the top of the riser to a minimum of 4" above the top of finished grade. No. 4 rebar shall be placed centered over the riser from the cap to the existing ground. The 1" PVC pipe shall be wrapped with green colored plastic tape, for the full length above ground surface. The green tape shall be 4 mil Polyethylene film with a minimum width of three inches, specifically manufactured for the purpose of identifying underground sewers.
- LOCATION MEASURES.** The project inspector shall record and document the location of all risers constructed as measured from the nearest manhole, indicating the direction from the manhole, the direction and distance from the main, riser size, and elevation of the top of the riser.
- RISER LOCATION.** The riser shall be located per plan if shown. If not shown on the plan, the riser shall be located at the center of the lot, within one foot of the property side of the easement for the lot being served. All riser locations shall be approved by the Construction Engineer prior to installation.
- PAYMENT.** "Sanitary sewer risers" shall be paid for at the contract unit price per each, which price shall be full compensation for all pipe, fittings, marking tape, length of 1" PVC, length of No. 4 rebar, rock encasement, support during backfill, backfill, labor, site restoration, and any other items necessary to complete the work.

"Manhole stubs" shall be paid for at the contract unit price per each, which shall be full compensation for all labor, material, and incidentals necessary to complete the work including all pipe, fittings, rock encasement, and all other items as required and listed for "Sanitary Sewer Risers".

No.	Line	Sta./Dir.	Lot No.	Block No.	Wye or Saddle Size	Main FL	Information Only Approx. Length 4" Pipe		Coordinates at end of 4" Pipe		Top Riser Elev. Proposed/Actual	Record Information (To Be Completed by Inspector)	
							Vert. (ft.)	Horiz. (ft.)	Northing	Easting		Distance from Nearest Manhole	Upstream
1	1	2+72	1	2	8" x 4"	1312.90	-90.6.9	-11.4.75	10032.63	19599.49	1322.90 / 1320.57	315	85
2	1	2+92	1	2	8" x 4"	1313.28	-91.6.2	-11.5.33	10033.03	19619.98	1323.35 / 1320.85	295	105
3	1	3+14	1	2	8" x 4"	1313.70	-91.6.0	-10.5.0	10032.45	19641.50	1323.80 / 1321.71	273	127
4	1	3+80	1	2	8" x 4"	1314.96	-90.5.0	-9.5.75	10032.73	19707.51	1325.00 / 1321.83	207	193
5	1	4+01	1	2	8" x 4"	1315.35	-91.6.0	-9.6.0	10033.13	19728.50	1325.40 / 1323.85	186	214
6	1	4+24	1	2	8" x 4"	1315.73	-92.6.0	-9.5.9	10032.58	19751.52	1325.97 / 1324.12	163	237
7	1	4+91	1	2	8" x 4"	1317.07	-92.6.5	-7.4.6	10032.88	19818.52	1327.80 / 1325.63	96	304
8	1	5+12	1	1	8" x 4"	1317.47	-92.6.5	-7.5.5	10033.29	19839.52	1328.38 / 1326.04	75	325
9	1	5+35	1	1	8" x 4"	1317.91	-92.7.4	-6.5.1	10032.73	19862.54	1329.07 / 1327.15	52	348
10	1	6+28	1	1	8" x 4"	1320.13	-10.8.0	-7.5.3	10033.32	19955.90	1331.98 / 1329.6	33	172
11	1	7+75	1	1	8" x 4"	1324.19	-96.8.0	-10.6.5	10033.17	20103.01	1334.83 / 1332.95	188	17
12	1	7+77	1	1	8" x 4"	1324.25	-97.8.0	-10.6.5	10033.09	20105.01	1334.90 / 1332.75	190	15
13	1	8+07	1	1	8" x 4"	1324.92	-97.7.5	-11.7.8	10033.45	20134.49	1335.65 / 1333.51	15	92
14	1	8+29	1	1	8" x 4"	1325.15	-10.7.8	-11.8.0	10033.42	20156.49	1336.30 / 1337.9	37	70
15	1	8+53	1	1	8" x 4"	1325.40	-10.4.5	-11.4.3	10033.39	20180.49	1336.80 / 1335.8	61	46
16	1	8+74	1	1	8" x 4"	1325.63	-11.2.8	-11.4.3	10033.36	20201.49	1337.80 / 1336.1	82	25
17	2	0+91	1	2	8" x 4"	1314.79	-95.6.3	-5.7.6	10325.46	19606.92	1325.27 / 1322.94	137	91
18	2	1+13	1	2	8" x 4"	1315.20	-95.7.5	-5.7.3	10325.46	19628.92	1325.71 / 1323.65	115	113
19	2	1+35	1	2	8" x 4"	1315.60	-96.6.8	-5.6.7	10325.46	19650.92	1326.15 / 1323.51	93	135
20	2	1+57	1	2	8" x 4"	1315.99	-96.6.5	-5.6.5	10325.46	19672.92	1326.62 / 1323.97	71	157
21	2	1+79	1	2	8" x 4"	1316.39	-96.6.8	-5.7.0	10325.47	19694.92	1327.19 / 1325.09	49	179
22	2	2+01	1	2	8" x 4"	1317.06	-97.6.3	-5.8.5	10325.47	19716.92	1327.76 / 1324.87	27	201
23	2	2+71	1	2	8" x 4"	1318.06	-10.9.0	-5.5.0	10325.48	19786.92	1329.58 / 1327.00	28	43
24	2	2+92	1	1	8" x 4"	1318.44	-10.7.9	-5.5.1	10325.48	19807.92	1330.13 / 1327.93	7	64
25	2	3+13	1	1	8" x 4"	1318.87	-10.8.10.1	-5.5.2	10325.48	19828.92	1330.68 / 1333.95	190	14
26	2	4+38	1	1	8" x 4"	1320.68	-10.11.5	-5.5.0	10325.49	19984.42	1330.68 / 1333.80	65	139
27	2	6+19	1	1	8" x 4"	1325.04	-7.9.8.9	-5.5.0	10325.51	20135.42	1333.98 / 1331.08	116	49
28	2	6+44	1	1	8" x 4"	1325.78	-11.18.3	-5.4.0	10325.51	20160.42	1337.83 / 1336.2	24	141
29	3	0+29	1	1	8" x 4"	1321.86	-12.3.1.3	-12.12.1	10301.50	20032.31	1335.18 / 1332.96	31	29
30	3	0+51	1	1	8" x 4"	1321.94	-12.11.6	-12.12.1	10280.00	20032.31	1335.02 / 1328.02	9	51
31	3	0+78	1	1	8" x 4"	1322.15	-11.7.11.4	-12.12.0	10252.50	20032.29	1334.81 / 1330.50	192	18
32	3	1+00	1	1	8" x 4"	1322.24	-11.4.11.0	-12.12.0	10230.50	20032.27	1334.64 / 1331.30	170	40
33	3	1+22	1	1	8" x 4"	1322.33	-11.0.10.7	-12	10208.50	20032.26	1334.29 / 1331.60	148	62
34	3	1+81	1	1	8" x 4"	1322.56	-10.3.10.2	-12	10149.50	20032.21	1333.81 / 1332.40	89	121
35	3	2+03	1	1	8" x 4"	1322.65	-10.2.9.1	-12	10127.50	20032.19	1333.85 / 1331.45	67	143
36	3	2+38	1	1	8" x 4"	1322.79	-9.8.10.8	-12	10092.50	20032.16	1333.59 / 1332.25	32	178
37	3	2+61	1	1	8" x 4"	1322.88	-9.5.7.3	-12	10069.50	20032.14	1333.42 / 1332.05	9	201
38	3	2+65	1	1	8" x 4"	1322.90	-9.5.7.3	-12	10065.50	20032.14	1333.38 / 1332.10	5	205

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 Phone 316/685-4114 • FAX 316/685-4444



FINAL
 Designed By: S. Schmidt
 Drawn By: M. Tucker
 P.O. Job No.: 1879
 Date: August 2007

No.	Date	By	Approved	Revision
1	10/12/07	SS	JU	Added Note to Provide for Sewer Service to Existing Structures
2	10/16/07	SS	JU	Revised vertical dimensions in table

PARKSTONE ADDITION
 RELOCATION OF PART OF DISTRICT B, SAN. SEWER# 12
 VERTICAL RISER DETAIL
 CITY OF WICHITA, KANSAS
 JAMES L. ARMOUR, P.E. - CITY ENGINEER
 Prof. No. 468-84376 O.C.A.# 744247