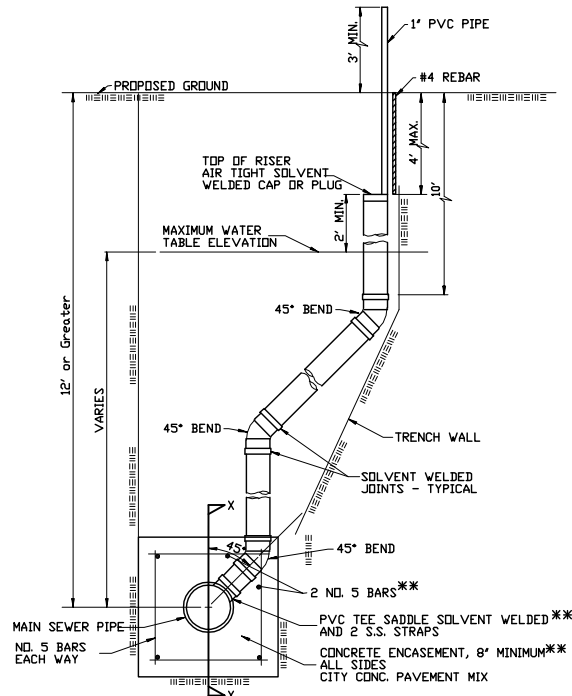
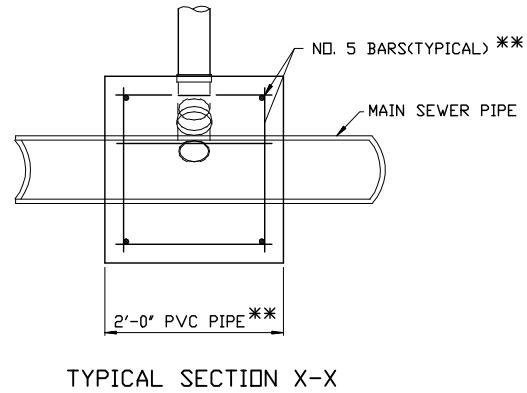
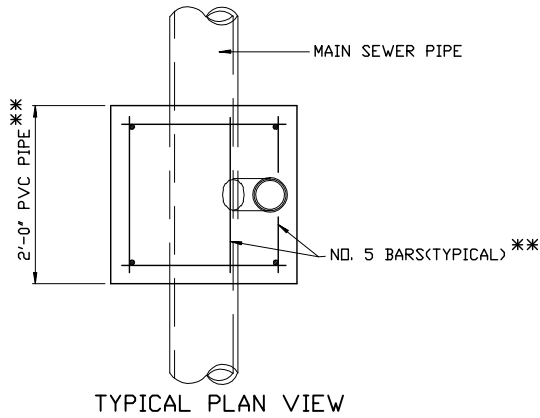


VERTICAL RISER DETAILS

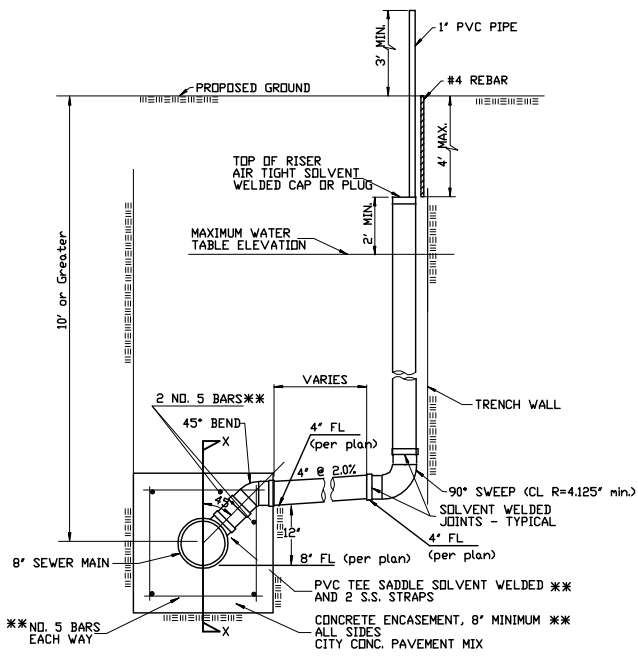
GENERAL NOTES



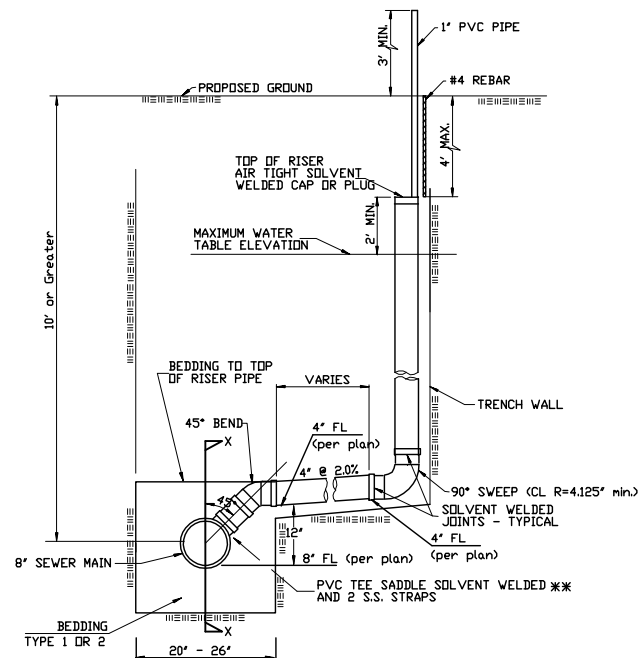
METHOD "A"
(Deeper than 12 feet)

- 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 and to extend across the proposed road. 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 shall 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 shall be solvent welded.
 - REINFORCED CONCRETE ENCASEMENT (USED WHEN GREATER THAN 12' DEEP TO SEWER MAIN).** Riser connections to PVC Sanitary Sewer mains shall be reinforced concrete encased one foot each way from the riser centerline. The concrete encasement shall be reinforced using reinforcing steel as shown in the appropriate drawing. The concrete shall be a 3,500 psi, 6.5 sack mix with a coarse aggregate to fine ratio of 30/70.
 - BEDDING.** 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.
- *** Type 1 Bedding Material shall be crushed rock conforming to A.S.T.M. C-33, Gradation No. 67. Type 2 Bedding Material shall be sand-gravel mix conforming to Kansas Department of Transportation Specifications for Type UD-1 underdrain aggregate.
- 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 1" PVC pipe extending from the top of the riser pipe to a minimum of 3 feet above the proposed ground. A #4 rebar shall be placed to a depth of 4 feet next to the 1" PVC pipe. The #4 rebar shall be flush with the proposed ground.
 - 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 front property line 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, rebar, reinforced concrete encasement, support during backfill, backfill, labor, site restoration, and any other items necessary to complete the work.

If the trenches are wet or unstable or dewatering is required, then Type 1 Bedding shall be used below the bottom of the 8" main and the depth of bedding material shall be extended to a minimum depth of 12 inches below the bottom of the main.



METHOD "B"
(Extension under proposed street &
Deeper than 10 feet)



METHOD "C"
(Extension under proposed street &
Less than 10 feet Deep)

SANITARY SEWER RISER SUMMARY

No.	Line	Sta./Dir.	Lot No.	Block No.	Wye or Saddle Size	Main FL	Information Only		Coordinates at end of 4" Pipe		Record Information		
							Approx. Length 4" Pipe		of 4" Pipe		Top Riser Elev. Proposed/Actual	(To Be Completed by Inspector)	
							Vert. (ft.)	Horiz. (ft.)	Northing	Easting		Distance from Nearest Manhole	Upstream
1	2	15+53.91	20	2	8"x4"	1319.55	4	35	9169.42	19910.75	1323.00	181'	202'
2	2	15+98.37	21	2	8"x4"	1319.91	4	43	9161.40	19955.22	1323.50	136'	246'
3	2	16+44.02	22	2	8"x4"	1320.27	4	35	9169.74	20000.86	1324.50	91'	292'
4	2	19+41.75	27	2	8"x4"	1322.65	6	43	9162.14	20298.60	1329.00	58'	207'
5	2	19+70.90	28	2	8"x4"	1322.89	7	43	9162.15	20327.75	1330.00	29'	236'
6	2	20+00.22	29	2	4" Stub	1323.13	8	20	9186.26	20362.06	1331.00	143'	265'
7	2	20+14.47	30	2	8"x4"	1323.29	9	20	9222.89	20374.42	1332.00	128'	14'
8	2	20+57.58	31	2	8"x4"	1323.46	9	27	9267.04	20377.37	1332.00	85'	57'
9	2	21+10.66	32	2	8"x4"	1323.67	10	15	9317.02	20354.03	1333.00	32'	110'
10	2	21+47.00	33	2	8"x4"	1323.87	11	15	9367.43	20349.00	1334.00	96'	45'
11	2	21+97.40	34	2	8"x4"	1324.07	10	15	9415.16	20348.86	1334.00	45'	55'
12	2	22+71.60	35	2	8"x4"	1324.31	9	20	9469.50	20360.08	1333.50	74'	29'
13	2	23+21.38	36	2	8"x4"	1324.50	9	22	9516.63	20376.86	1333.10	25'	79'
14	2	23+66.21	37	2	8"x4"	1324.68	8	16	9567.44	20373.41	1333.00	365'	20'
15	2	24+14.87	38	2	8"x4"	1324.88	8	18	9616.14	20373.27	1333.00	305'	69'
16	2	24+57.97	39	2	8"x4"	1325.05	8	20	9659.27	20373.14	1332.50	262'	112'
17	2	25+07.12	40	2	8"x4"	1325.25	7	22	9708.47	20372.99	1332.50	213'	161'
18	2	27+19.80	47	2	4" Stub	1326.10	4	20	9932.04	20332.67	1330.00	116'	374'
19	3	5+68.82	3	3	8"x4"	1306.38	10	10	8179.47	19034.46	1316.20	6' from cleanout	29'
20	4	2+51.68	1	3	4" Stub	1307.06	9	10	8411.84	18965.52	1316.00	No upstream	251'

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

No.	Date	By	Approved	Revision

TERRAYNE WEST ADDITION
LATERAL 402, FOUR MILE CREEK SEWER
VERTICAL RISER DETAIL
CITY OF WICHITA, KANSAS
JAMES L. ARMOUR, P.E. - CITY ENGINEER
Proj. No. 468-84261 O.C.A.# 744203

POE & ASSOCIATES, INC.
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2940 E. Central, Suite 200 - Wichita, KS 67208-0902
Phone 316/685-4114 • FAX 316/685-4444



FINAL
Designed By: J. Ubert / J. Dickman
Drawn By: M. Tucker
Poe Job No.: 1809
Date: December 2006