# SANITARY SEWER CONSTRUCTION NOTES

(ISSUE DATE: 7/25/08)

1. ALIGNMENT, CENTERLINE CURVE DATA, AND STATIONING TO BE DETERMINED FROM APPROVED, RECORDED SUBDIVISION PLAT OR ROAD RIGHT-OF-WAY.

2. SEWER MAINS, MANHOLES AND LIFT STATIONS ARE TO BE DESIGNED, TO BE CONSTRUCTED AND TESTED IN ACCORDANCE WITH CITY OF TOMBALL STANDARDS AND TNRCC TITLE 30 CHAPTER 317 OF THE TEXAS ADMINISTRATIVE CODE. TAC∋ 317.2 REQUIRES LOW-PRESSURE AIR TESTS TO CONFORM TO THE PROCEDURE DESCRIBED IN ASTM C828, C924, F-1417 OR OTHER APPROPRIATE PROCEDURES. FOR SAFETY REASONS, AIR TESTING OF SECTIONS OF PIPE SHALL BE LIMITED TO LINES LESS THAN 36-INCH AVERAGE INSIDE DIAMETER. LINES 36-INCH IN DIAMETER OR LARGER MAY BE AIR TESTED AT EACH JOINT. DEFLECTION TESTING OF ALL FLEXIBLE AND SEMI-RIGID PIPE SHALL BE CONDUCTED AFTER THE FINAL BACKFILL HAS BEEN IN PLACE FOR AT LEASE 30 DAYS. NO PIPE SHALL EXCEED A DEFLECTION OF 5%. THE DEFLECTION TEST IS TO BE RUN USING A RIGID MANDREL, AND SHALL HAVE A DIAMETER EQUAL TO 95% OF THE INSIDE DIAMETER OF THE PIPE. TEST SHALL BE PERFORMED WITHOUT MECHANICAL PULLING DEVICES. ALL TESTS TO BE WITNESSED & APPROVED BY CITY OF TOMBALL.

3. MAINTAIN 12 INCH MINIMUM CLEARANCE AT CROSSINGS BETWEEN ALL OTHER UTILITY LINES, STORM SEWERS, AND CULVERTS UNLESS OTHERWISE NOTED.

4. SEWER TRENCHES UNDER OR WITHIN ONE (1) FOOT OF PROPOSED OR FUTURE PAVEMENT TO BE BACKFILLED WITH CEMENT SAND (1.5 SACKS PER TON) BACKFILL AS SPECIFIED, TO WITHIN ONE (1) FOOT OF SUBGRADE, BEDDING WILL BE CLASS AAA≅ WHERE CEMENT-SAND BACKFILL IS USED FOR SANITARY SEWERS. INCLUDE COST OF BACKFILL IN UNIT PRICE BID PER LINEAR FOOT OF PIPE.

5. ALL PROPOSED GRAVITY SANITARY SEWER LINES WILL BE DUCTILE IRON, OR SDR 26 PVC PIPE & 8" MIN I.D. UNLESS APPROVED OTHERWISE.

6. BEDDING FOR ALL TYPES OF SANITARY SEWER PIPE SHALL BE CEMENT STABILIZED SAND (1.5 SACKS PER TON) CLASS AA≅ AT ALL DEPTHS. ALL SEWER LINES TO BE INSPECTED BY CITY OF TOMBALL PRIOR TO BACKFILL.

7. FOR PVC PIPE, USE MANHOLE WATERSTOP GASKET AND CLAMP ASSEMBLY AT MANHOLE CONNECTIONS (NO SEPARATE PAY).

8. SANITARY SEWER MANHOLES SHALL BE PRECAST OR POURED IN PLACE MONOLITHIC CONCRETE, AND BACKFILLED WITH CEMENT- SAND AS SPECIFIED (NO SEPARATE PAY). MANHOLES WILL BE EXFILTRATION TESTED AS SPECIFIED BY THE CITY OF TOMBALL.

9. ALL FAR-SIDE LEADS SHALL BE FOUR (4) INCHES OR SIX (6) INCHES AT 1.0% MIN. SLOPE. SIX (6) INCH ABS WILL NOT BE ACCEPTABLE. ALL FAR SIDE LEADS (OPEN-CUT OR BORED AND JACKED) SHALL BE DUCTILE IRON, 150 PSI THICKNESS CLASS 50, OR PVC, DR-18.

10. ALL PRECAST CONCRETE AND POURED-IN-PLACE CONCRETE MANHOLES SHALL HAVE THE TOP18 INCHES CONSTRUCTED OF PRECAST RINGS & TO EXTEND 3"-6" ABOVE NATURAL GRADE.

11. STUBS OR LEADS SERVING TWO LOTS SHALL HAVE A SERVICE AWYE≅ AND CLEANOUT WITH PLUGS (NO SEPARATE PAY). THE AWYE≅ SHALL BE LOCATED WITHIN THE STREET RIGHT-OF-WAY OR AN ADJOINING UTILITY EASEMENT.

12. STACKS SERVING NEAR-SIDE AND FAR-SIDE LOTS SHALL HAVE A SERVICE "WYE≅ AND CLEANOUTS WITH PLUGS FOR THE NEAR-SIDE LOT (NO SEPARATE PAY).

13. ALL DUCTILE IRON PIPE & FITTINGS SHALL BE 150 PSI THICKNESS CLASS 50 WITH EIGHT (8) MIL BLACK VIRGIN POLYETHYLENE WRAP AS SPECIFIED. ALL PVC PIPE SHALL HAVE RUBBER GASKET JOINTS.

14. MANHOLE RIMS ARE TO BE SET AT THE ELEVATIONS SHOWN ON THE PLANS INITIALLY, AFTER PAVING AND GRADING IS COMPLETED, RIMS ARE TO BE ADJUSTED TO THREE (3) TO SIX (6) INCHES ABOVE FINAL GRADE AND BLACK DRESS DIRT TO PROVIDE DRAINAGE AWAY FROM MANHOLE.

15. ALL PVC PIPE SHALL HAVE RUBBER GASKET EQUIPPED BELL AND SPIGOT JOINTS. SOLVENT WELDED JOINTS WILL NOT BE APPROVED FOR THIS PROJECT.

16. ALL GRADE CHANGES AT MANHOLES IN EXCESS OF 2 FEET SHALL BE ACCOMPLISHED WITH DROP MANHOLE CONNECTIONS, CITY OF TOMBALL DRAWING No. 81.

17. CONTRACTOR TO FURNISH CITY WITH RECORD DRAWINGS UPON COMPLETION OF PROJECT.

SPECIAL NOTES: LOCATION OF SANITARY SEWER FACILITIES

THE UTILITY C0NTRACTOR IS RESPONSIBLE FOR LOCATING AND MARKING -ALL STACKS AND FAR-SIDE LEADS AFTER THE PAVING IN THIS SECTION IS COMPLETE.

A ¼ -INCH DEEP NOTCH SHALL BE CUT IN THE CURB AND PAINTED WITH A RED LINE ADJACENT TO THE STACK OR LEAD.

IF STAKES ARE LEFT IN THE GROUND AT THE STACKS AND LEADS AFTER CONSTRUCTION OF UTILITIES, THEN AN EFFORT WILL BE MADE TO PRESERVE THEM DURING PAVING CONSTRUCTION. HOWEVER, IF THESE STAKES ARE KNOCKED OUT FOR ANY REASON, THE UTILITY CONTRACTOR REMAINS RESPONSIBLE FOR LOCATING AND MARKING THE FACILITIES AS DESCRIBED ABOVE.