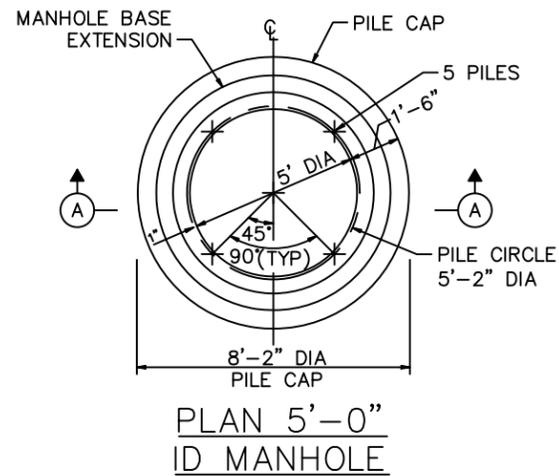


**NOTES:**

1. PILING SUPPORT SHALL BE INSTALLED AT ALL LOCATIONS WHERE HEAVING SUBGRADE CONDITIONS ARE LIKELY TO OCCUR, AS DETERMINED BY THE CITY ENGINEER.
2. THE CITY ENGINEER WILL PROVIDE THE SIZE, LENGTH, AND MATERIAL OF PILE NEEDED TO CARRY THE CAPACITY SHOWN ON TABLE 1 BASED ON ACTUAL CONDITIONS REVEALED AT TIME OF CONSTRUCTION.

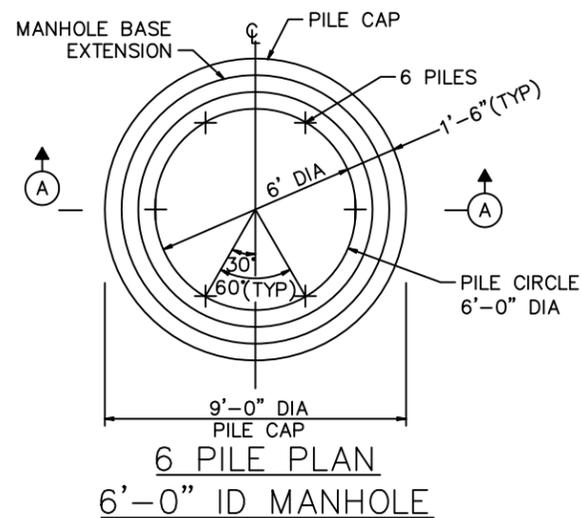


**TABLE 1**  
PILE REQUIREMENTS

MANHOLE ID (FT)	NUMBER OF PILES	DEPTH TO INVERT (FT)	CAPACITY/PILE (TONS) MINIMUM	PILE CAP DIMEN A (FT)	PILE CAP REINF (EW)
4	4	10	10	1'-9"	# 6 @ 6"
		12	90		
		15	13		
		20	15		
		30	17		
5	5	10	10	1'-9"	# 6 @ 6"
		12	11		
		15	12		
		20	15		
		30	20		
6	6	10	9	2'-0"	# 6 @ 6"
		12	10		
		15	12		
		20	15		
		30	20		
8	9	10	8	2'-0"	# 7 @ 6"
		12	9		
		15	10		
		20	13		
		30	18		

**NOTES TO SPECIFIER:**

1. INCLUDE THIS DETAIL ONLY IF THE GEOTECHNICAL REPORT INDICATES THAT AN UNSTABLE FOUNDATION (ONE WHICH WILL NOT ALLOW COMPACTION AND/OR DEWATERING AS SPECIFIED) IS POSSIBLE. IF THIS CONDITION IS REPORTED BY THE GEOTECHNICAL ENGINEER, NOTIFY THE CITY'S PROJECT MANAGER.
2. ALWAYS INCLUDE COMPANION STANDARD DETAIL SHOWING CRUSHED STONE SUPPORTED MANHOLE FOR UNSTABLE SUBGRADE WITH THIS DETAIL.
3. WHERE SOIL BORINGS ARE MADE AT MANHOLE LOCATIONS AND THE GEOTECHNICAL ENGINEER BELIEVES THAT THE CONDITIONS REQUIRING THIS DETAIL ARE LIKELY TO EXIST, PROVIDE PILE DESIGN INFORMATION DETERMINED BY THE GEOTECHNICAL ENGINEER FOR EACH SUCH MANHOLE. ADJUST NOTE#2 TO INDICATE THAT THE PILE INFORMATION PROVIDED MAY NEED TO BE ADJUSTED OR THE PILES ELIMINATED AND THAT OTHER MANHOLE LOCATIONS NOT SHOWN AS PILE SUPPORTED MAY NEED PILES DEPENDING ON ACTUAL CONDITIONS UNCOVERED.
4. PROVIDE APPROPRIATE PILE SPECIFICATIONS.



NOT TO SCALE

**CITY OF TOMBALL**  
ENGINEERING & PLANNING DEPARTMENT

**PILE SUPPORTED  
MANHOLE FOR  
UNSTABLE SUBGRADE**

APPROVED BY COT:

ENGINEERING & PLANNING DEPARTMENT  
EFFECTIVE JULY 1, 2010

SHEET 001 OF 001

DWG NO: COT WW-10