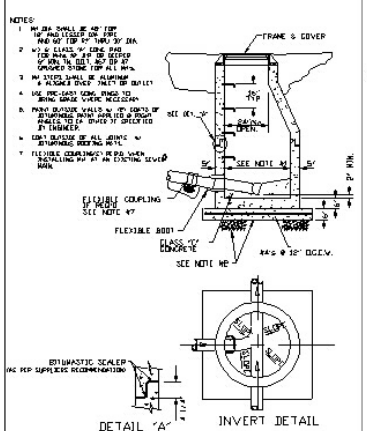
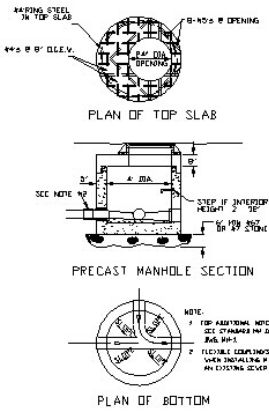
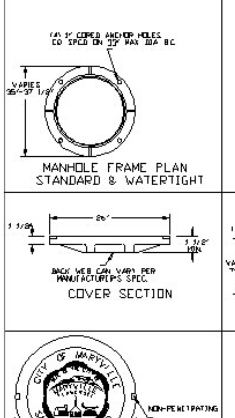
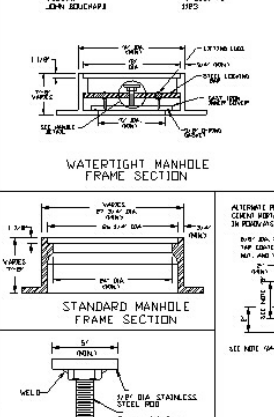


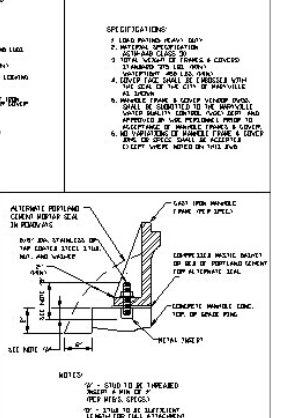
STANDARD PRE-CAST MANHOLE (MH-1)



SHALLOW MANHOLE DETAIL







SPECIFICATIONS:

1. STRUCTURAL DESIGN: THE TANK SHALL BE DESIGNED TO REMAIN WATERTIGHT AND STRUCTURALLY SOUND WITHOUT CRACKING UNDER THE MAXIMUM COVER HEIGHT OF 6.5' ABOVE THE OUTLET INVERT WATER TABLE AT THE GROUND SURFACE, AND NO WATER IN THE TANK. THE DESIGN MUST SHOW THAT WATERTIGHT INTEGRITY IS ACHIEVED THROUGH THE USE OF QUALITY CONCRETE RATHER THAN THROUGH AN IMPERVIOUS BARRIER. USE OF INTERIOR OR EXTERIOR COATINGS IS NOT ACCEPTABLE AS A PRIMARY WATERTIGHTNESS SYSTEM.

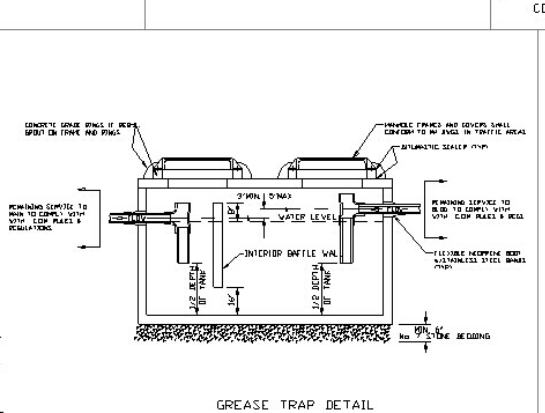
2. INTERNAL PLUMBING: NEOPRENE BOOTS WITH STAINLESS STEEL LOCKING BANDS SHALL BE USED ON ALL INLET AND OUTLET PIPING TO ENSURE A WATERTIGHT SEAL BETWEEN THE TANK WALL AND THE INLET AND OUTLET PIPING.

3. RISERS AND M.H. FRAME AND COVER: WHEN THE ELEVATION OF THE TOP OF THE GREASE TANK M.H. COVER NEEDS TO BE RAISED, CONCRETE GRADE RINGS SEALED WITH SELF-ADHERING ASPHALT SEALING STRIPS SHALL BE USED. M.H. FRAME SHALL ALSO BE SEALED WITH ASPHALT SEALING STRIPS AND BOLTED AND GROUTED ONTO THE GREASE TANK TOP OR GRADE RINGS.

4. MINIMUM REQUIREMENTS: PRE-CAST CONCRETE SEPTIC TANKS SHALL ALSO MEET THE FOLLOWING MINIMUM REQUIREMENTS:
a. PRE-CAST REINFORCED CONCRETE WALLS AND TOPS SHALL HAVE A MINIMUM THICKNESS OF THREE (3) INCHES.
b. SECTIONS SHALL BE CURED FOR 24 HRS. MINIMUM.
c. SELF-ADHERING ASPHALT SEALANT STRIP SHALL BE USED FOR SEALING ALL TANK JOINTS.
d. THE MAXIMUM WATER-TO-CEMENT RATIO SHALL BE 0.45.

5. CEMENT: THE CEMENT SHALL BE PORTLAND CEMENT CONFORMING TO THE CURRENT ASTM SPECIFICATION C-150, TYPE I PORTLAND NORMAL GREY COLOR TYPE III PORTLAND GREY COLOR SHALL BE USED WHERE HIGH EARLY STRENGTH CONCRETE IS SPECIFIED.

6. TEST FOR WATERTIGHT INTEGRITY:
a. THE ENVIRONMENTAL COMPLIANCE INSPECTOR RESERVES THE RIGHT TO WATER TEST ANY TANK FOR WATER-TIGHTNESS, AT THE CONTRACTORS EXPENSE. TESTS SHALL BE PERFORMED UPON INSTALLATION PRIOR TO FINAL BACKFILLING. THE INTENT OF THE TEST IS TO ENSURE WATERTIGHT GREASE TANKS UNDER GROUNDWATER CONDITIONS.
b. THE WATER TEST WILL BE PERFORMED BY FILLING THE TANK AND ATTACHED RISER WITH WATER TO A HEIGHT OF TWO (2) FEET ABOVE THE PIPE-TO-TANK CONNECTION. ANY LEAKAGE WITHIN 24 HOURS CONSTITUTES A FAILURE OF THIS TEST.



SPECIFICATIONS:

1. STRUCTURAL DESIGN: THE TANK SHALL BE DESIGNED TO REMAIN WATERTIGHT AND STRUCTURALLY SOUND WITHOUT CRACKING UNDER THE MAXIMUM COVER HEIGHT OF 5.5' ABOVE THE OUTLET INVERT WATER TABLE AT THE GROUND SURFACE, AND NO WATER IN THE TANK. THE DESIGN MUST SHOW THAT WATERTIGHT INTEGRITY IS ACHIEVED THROUGH THE USE OF QUALITY CONCRETE RATHER THAN THROUGH AN IMPERVIOUS BARRIER. USE OF INTERIOR OR EXTERIOR COATINGS IS NOT ACCEPTABLE AS A PRIMARY WATERTIGHTNESS SYSTEM.

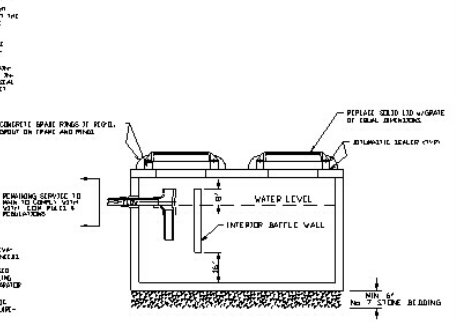
2. INTERNAL PLUMBING: NEOPRENE BOOTS WITH STAINLESS STEEL LOCKING BANDS SHALL BE USED ON ALL INLET AND OUTLET PIPING TO ENSURE A WATERTIGHT SEAL BETWEEN THE TANK WALL AND THE INLET AND OUTLET PIPING.

3. RISERS AND M.H. FRAME AND COVER: WHEN THE ELEVATION OF THE TOP OF THE GRIT SEPARATOR M.H. COVER NEEDS TO BE RAISED, CONCRETE GRADE RINGS SEALED WITH SELF-ADHERING ASPHALT SEALING STRIPS SHALL BE USED. M.H. FRAME SHALL ALSO BE SEALED WITH ASPHALT SEALING STRIPS AND BOLTED AND GROUTED ONTO THE GRIT SEPARATOR TOP OR GRADE RINGS.

4. MINIMUM REQUIREMENTS: PRE-CAST CONCRETE SEPTIC TANKS SHALL ALSO MEET THE FOLLOWING MINIMUM REQUIREMENTS:
a. PRE-CAST REINFORCED CONCRETE WALLS AND TOPS SHALL HAVE A MINIMUM THICKNESS OF THREE (3) INCHES.
b. SECTIONS SHALL BE CURED FOR 24 HRS. MINIMUM.
c. SELF-ADHERING ASPHALT SEALANT STRIP SHALL BE USED FOR SEALING ALL TANK JOINTS.
d. THE MAXIMUM WATER-TO-CEMENT RATIO SHALL BE 0.45.

5. CEMENT: THE CEMENT SHALL BE PORTLAND CEMENT CONFORMING TO THE CURRENT ASTM SPECIFICATION C-150, TYPE I PORTLAND NORMAL GREY COLOR TYPE III PORTLAND GREY COLOR SHALL BE USED WHERE HIGH EARLY STRENGTH CONCRETE IS SPECIFIED.

6. TEST FOR WATERTIGHT INTEGRITY:
a. THE ENVIRONMENTAL COMPLIANCE INSPECTOR RESERVES THE RIGHT TO WATER TEST ANY TANK FOR WATER-TIGHTNESS, AT THE CONTRACTORS EXPENSE. TESTS SHALL BE PERFORMED UPON INSTALLATION PRIOR TO FINAL BACKFILLING. THE INTENT OF THE TEST IS TO ENSURE WATERTIGHT GRIT SEPARATOR UNDER GROUNDWATER CONDITIONS.
b. THE WATER TEST WILL BE PERFORMED BY FILLING THE TANK AND ATTACHED RISER WITH WATER TO A HEIGHT OF TWO (2) FEET ABOVE THE PIPE-TO-TANK CONNECTION. ANY LEAKAGE WITHIN 24 HOURS CONSTITUTES FAILURE OF THIS TEST.



CITY OF MARYVILLE

GENERAL UTILITY NOTES

All sewer and water improvements shall be built in accordance with the MINOR PERMITTING RULES AND POLICIES of the City of Maryville, water quality control requirements, manholes, Tennessee Rules, are available from the City of Maryville WQCB and or the also the Tennessee State Department of Health and Environment.

In cases of conflict the City of Maryville WQCB regulations shall rule.

It shall be the developers and contractors responsibility to obtain and follow the regulations of the City of Maryville.

Easements and roads as per the subdivision plat or recorded easements documents. If the necessary easements are not in place the developer shall obtain and furnish the City of Maryville the easements for the purpose of sewer lines from across property. The easement documents shall be reviewed by the City of Maryville for completeness prior to recording. All easement documents shall be executed prior to construction of the utility facility.

All water and sewer lines shall be laid in undisturbed earth and minimum protection.

At the junction of all undisturbed and over fill sections of the sewer trench the earth fill shall be well compacted to an approximate distance of 10' by compacted earth around the installed pipe to prevent piping of water through the pipe bedding.

Utilities crossing under other utilities shall be back filled with compacted No. 7 stone to the spring line of the upper utility to prevent settling of the utility. Any utility trenches other than roadway and open or forested areas shall be compacted stone as may be later requirements.

WATER AND SEWER stations shall not be granted final approval by the City of Maryville until "AS BUILT" drawings have been completed and are acceptable to the City of Maryville.

CITY OF MARYVILLE

MANHOLE SEWER SPECIAL NOTES

SEWER IN FILL - Sewer lines laid in fill shall be:
A. Backed with dirt
B. Isolated on piers.
This requirement may be waived in whole or in part by the local utility district, if sufficient inspection was been performed as per the TENNESSEE 1-800 number.

MANHOLE JOINTS - Shall be the contractors responsibility to clean the mortar inside pipe and manholes and for final grade and/or surface.

MANHOLE INVERTS - Shall be the deflection angle of the invert of a manhole exceeds 90 degrees the City of Maryville requires that:
1. The inlet invert be at least 0.20 feet higher than the outlet invert.
2. The channel from the inlet to the outlet shall be flowed so as the entire line may flow always smaller to the next section of the line.

DEEP SEWER LINES - Sewer line making cover is more than 15 feet over the proposed sewer line the ground must be graded to less than 15 feet of cover over the proposed sewer line prior to sewer construction to the extent the need be reinforced of ductile iron pipe. In all cases where the final cover over the sewer line is greater than 15 feet the sewer line shall be constructed of ductile iron pipe.

SHALLOW SEWER LINES - Sewer line making cover is more than 2'-0" feet in open areas or 4'-0" feet in roadway the sewer line shall be made of heavy wall ductile iron pipe. Unless required by the City of Maryville Concrete encasement shall be used. If fill is used to meet minimum cover requirements, the fill must be in place prior to utility line installation.

SEWAGE TESTING - All manholes will be vacuum tested as per the City of Maryville and State of Tennessee requirements prior to acceptance.

SEWER LINES - Sewer lines shall be installed in the bedding and manner in all portions of ROW and public and the contractor of such materials to test the flow in drain effect of the ground bedding. The minimum spacing between cross lines shall be 300 feet. Sewer lines shall be installed at right angles to the bedding at least seven feet long, to the top of the trench and not into the walls of the trench the rest. Alternate construction is the use especially for the sewer lines into the manholes and into the trench walls this form.

TEES AND LATERALS - All tees and laterals connected to mains. Wye ductile iron cast sewer pipe and all laterals connected to manholes to meet as more or depth shall be made. Lined during construction.

MANHOLE LOCATIONS - All manholes coverings (castings) shall be "Sewer Name For the Books" Inscription. The depth of the line entering or exiting the manhole is 24" or greater.

SEWER SERVICE CONNECTIONS - Sewer Service Pipe as required to be connected to a Wye saddle and tees. Filled with stone to prevent settling in areas of unsatisfactory material. Such a determination will be made by the City of Maryville at the time of construction.

CITY OF MARYVILLE
PEOPLE are the KEY

WATER QUALITY CONTROL
CITY OF MARYVILLE
MARYVILLE, TENNESSEE

DRAWN BY: CCT	TITLE		SCALE: NONE
APP'D BY: JG	STANDARD DETAIL DWGS.	SEWER	SHEET 1 of 2
DATE: 1-30-97			
REVISION			
DESCRIPTION			W.O.

8/3/98 revise location of text box and sections ---
6/14/98 change note green line to red on plans
2/27/98 change revision dates to read to latest rev 1731 users