NOTES:

1. THE MINIMUM PIPE SIZE SHALL BE 6 INCHES IN DIAMETER.
2. A MANHOLE SHALL BE INSTALLED AT ALL INTERSECTING LINES AND CHANGES OF GRADE, ALIGNMENT, PIPE SIZES OR MATERIALS.
3. ALL SERVICE CONNECTIONS TO SANITARY SEWERS SHALL BE MADE AT WYES OR BY CUTTING A HOLE AND INSTALLING A COLLAR WYE SADDLE. NO CONNECTIONS WILL BE PERMITTED IN LINES OVER 15 INCHES IN DIAMETER EXCEPT AT MANHOLES.
4. THE MANNING "n" SHALL BE NOT LESS THAN 0.013 FOR ALL PIPES.
5. A SLOPE OF 0.006 FT./FT. MINIMUM ON ENDS OF RUNS UP TO 15 CONNECTIONS. MORE THAN 15 CONNECTIONS, SLOPE SHALL BE AS PER THE ABOVE SCHEDULE.
6. PROVIDE A MINIMUM COVER OF 2.5 FEET TO TOP OF PIPE. WHERE MINIMUM COVER CANNOT BE OBTAINED, DUCTILE IRON CEMENT LINED PIPE SHALL BE USED WHEN APPROVED BY THE CITY ENGINEER.
7. THE CITY ENGINEER WILL REQUIRE DEWATERING FOR ALL CONSTRUCTION BELOW EXISTING WATER TABLE.
8. MINIMUM SEWER LINE SLOPE SHALL BE SUFFICIENT TO MAINTAIN AN EFFLUENT VELOCITY OF 2 FEET PER SECOND OR GREATER.
9. REFER TO SECTION NO. 71 OF THE STANDARD SPECIFICATION FOR ADDITIONAL DESIGN GUIDE CRITERIA.
10. TEMPORARY MANHOLE PUMPING STATION DETAILS SHALL BE SUBMITTED WITH THE IMPROVEMENT PLANS FOR APPROVAL.

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**SANITARY SEWER PROFILE DATA**

**City of Manteca**

**Department of Public Works**

**DRAWN BY:** J. Hulsey

**CHECKED BY:** J. Podesta

**SCALE:** None

**APPROVED BY:**

**DIRECTOR OF PUBLIC WORKS**

**DRAWING NO.:** S-1

**DATE:** JAN. 1988
WASTEWATER SEWER SYSTEM DESIGN SHALL BE IN CONFORMANCE WITH THE CITY OF MANTECA'S CURRENT WASTEWATER SEWER SYSTEM MASTER PLAN.

ASSUME SINGLE FAMILY RESIDENCE AVERAGE OF 4.5 LOTS PER ACRE AND 3.3 PERSONS PER LOT OR 14.8 PERSONS PER ACRE.

VOLUME

RESIDENTIAL:

AVERAGE FLOW

100 GAL./PERSON/DAY

COMMERCIAL:

AVERAGE FLOW

3,400 GAL./ACRE/DAY

PEAK FLOW

10,000 GAL./ACRE/DAY

INDUSTRIAL AND INSTITUTIONAL (NON-SEASONAL):

AVERAGE FLOW

4,700 GAL./ACRE/DAY

PEAK FLOW

13,500 GAL./ACRE/DAY
NOTES:

1. PRECAST REINFORCED CONCRETE MANHOLE UNIT SHALL CONFORM TO A.S.T.M. C-478.
2. PIPE JOINT SHALL BE WITHIN 6 INCHES OF OUTER WALLS OF MANHOLE.
3. MANHOLE BASE TO BE TROWELED SMOOTH INSIDE.
4. MANHOLE SHALL BE CLEANED IN ACCORDANCE WITH CITY OF MANTECA SPECIFICATIONS.
5. SHORT CONE TO BE USED ONLY WHEN MANHOLE DEPTH JUSTIFIES.
6. COLLAR SHALL BE CLASS "B" CONCRETE AND CONSTRUCTED 2 1/2 INCHES BELOW FINISHEDGRADE.
NOTES:

1. PRECAST REINFORCED CONCRETE MANHOLE UNIT SHALL CONFORM TO A.S.T.M. C-478.
2. PIPE JOINT SHALL BE WITHIN 5 INCHES OF OUTER WALLS OF MANHOLE.
3. MANHOLE BASE TO BE TROWELED SMOOTH INSIDE.
4. MANHOLE SHALL BE CLEANED IN ACCORDANCE WITH CITY OF MANTECA SPECIFICATIONS.
5. SHORT CONE TO BE USED ONLY WHEN MANHOLE DEPTH JUSTIFIES.
6. COLLAR SHALL BE CLASS "B" CONCRETE AND CONSTRUCTED 2 1/2 INCHES BELOW FINISHED GRADE.

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**SANITARY SEWER MANHOLE**

**36" THRU 42" DIA. PIPES**

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**CITY OF MANTECA**

**DEPARTMENT OF PUBLIC WORKS**

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**DRAWN BY:** J. HULSEY

**CHECKED BY:** J. PODESTA

**SCALE:** NONE

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**APPROVED BY:**

**DIRECTOR OF PUBLIC WORKS**

**DRAWING NO.:** S-4

**DATE:** JAN. 1988
NOTES:

1. CLAY PIPE FITTINGS WITH TOP HALF BROKEN OUT IS REQUIRED FOR TROUGH.
2. TROUGHS WITHIN MANHOLE SHALL BE FULLY ACCESSIBLE.
3. MANHOLE SHALL BE CLEANED OF ALL EXCESS MATERIALS.
4. CONCRETE TROUGH CONSTRUCTED INTO BASE OF MANHOLE MAY BE USED WITH THE APPROVAL OF THE CITY ENGINEER.
5. ALL OTHER MANHOLE REQUIREMENTS AS PER STANDARD SANITARY SEWER MANHOLE DETAIL.
NOTES:

1. THIS TYPE OF MANHOLE SHALL BE USED WHEN THE DIFFERENCE IN ELEVATIONS OF THE FLOW LINE OF UPPER LINE AND CROWN OF LOWER LINE EXCEEDS 24 INCHES.
2. ALL OTHER CONDITIONS AS NOTED ON STANDARD SANITARY SEWER MANHOLE DETAIL SHALL APPLY.
NOTES:

1. THIS TYPE OF MANHOLE SHALL BE USED ONLY WHEN TIEING INTO AN EXISTING MANHOLE.
2. THIS TYPE OF MANHOLE SHALL BE USED WHEN THE DIFFERENCE IN ELEVATION OF THE FLOW LINE OF THE UPPER LINE AND THE CROWN OF THE LOWER LINE EXCEEDS 24 INCHES.
3. ALL OTHER CONDITIONS AS NOTED ON STANDARD SANITARY SEWER MANHOLE DETAIL SHALL APPLY.

INSIDE SEWER DROP MANHOLE

CITY OF MANTECA
DEPARTMENT OF PUBLIC WORKS

DRAWN BY: A. MENOR
CHECKED BY: J. PODESTA
SCALE: NONE

DRAWING NO. S-7
DATE: JAN. 1988

APPROVED BY:

PINKERTON
FRAME PART NO. A-625 APPROX. WT. 140 LBS.
COVER PART NO. A-106 APPROX. WT. 163 LBS.
OR APPROVED EQUAL FRAME AND COVER

THE WORD "SEWER" FOR SANITARY SEWER OR THE WORD "STORM" FOR STORM DRAIN AS APPROPRIATE SHALL BE EMBOSSED ON CENTER DISC.

MATING SURFACES OF FRAME & COVER MACHINED.
NOTES:
1. PRECAST REINFORCED CONCRETE MANHOLE CONE SHALL CONFORM TO A.S.T.M. C-478.
2. ECCENTRIC CONE TO BE USED ONLY WITH THE APPROVAL OF THE CITY ENGINEER.
CAST IRON CLEAN-OUT FRAME & COVER ASSEMBLY
(PINKERTON A-142 OR EQUAL) TO MATCH FINISH GRADE

CLASS "B" CAST IN PLACE CONCRETE

6"
27"
36"
20"
10"

TOP

JOINTS ARE NOT TO BE ENCASED IN CONCRETE.

VARIABLE

4"

SANITARY SEWER LINE

ELEVATION

45°

COLLAR CONSTRUCTED 2 1/2" BELOW FINISHED GRADE

PIPE FOR CLEAN-OUT SHALL BE THE SAME AS SANITARY SEWER LINE

3 5/8" DIA. x 6" BOLTS

END VIEW

MAIN LINE CLEAN-OUT

CITY OF MANTeca
DEPARTMENT OF PUBLIC WORKS

NO. REVISED BY

DRAWN BY: B. CANTU
CHECKED BY: J. PODESTA
SCALE: NONE

APPROVED BY:
DIRECTOR OF PUBLIC WORKS
DRAWING NO. S-10
DATE: JAN.1988
PINKERTON:
FRAME PART NO. A-144 APPROX. WT. 45 LBS.
COVER PART NO. A-144 APPROX. WT. 25 LBS.
OR APPROVED EQUAL

CAST IRON FRAME & COVER SHALL

SECTION A-A

MAIN CLEAN-OUT FRAME
AND COVER ASSEMBLY

CITY OF MANTECA
DEPARTMENT OF PUBLIC WORKS

DRAWN BY: B. CANTU
CHECKED BY: J. PODESTA
SCALE: NONE

PRINTED ON DIEPO NO. 1000M CLEARPRINT
NOTES

1. ANY SANITARY SEWER LATERAL THAT CROSSES A WATER MAIN SHALL BE DUCTILE IRON CEMENT-LINED OR P.V.C. (C-900) FOR TEN FEET IN EACH DIRECTION FROM THE CROSSING, UNLESS THE WATER MAIN IS ONE FOOT OR GREATER ABOVE THE SANITARY SEWER LATERAL.

2. FITTINGS, WYE BRANCH, RISER AND LATERALS SHALL BE OF THE SAME DIAMETER.

3. CLEAN-OUT MAY BE CAST IRON, PLASTIC, OR VITRIFIED CLAY PIPE.

4. SEWER LATERALS WITH COVER LESS THAN 30 INCHES SHALL BE DUCTILE IRON CEMENT-LINED PIPE.

5. 4" LONG RADIUS WYE WITH CAP AND TEMPORARY 4" CLEAN-OUT RISER WITH CAP TO BE CONSTRUCTED & TESTED WITH SEWER LATERAL.

6. PERMANENT CLEANOUT RISER SHALL BE ADJUSTED TO FINAL GRADE WITH INSTALLATION OF THREADED CLEAN-OUT PLUG & BOX BY BUILDING CONTRACTOR. REFER TO CITY STANDARD S-13 AND S-13A FOR CLEAN-OUT RISER SPECIFICATIONS.
NOTES:

1. CLEAN-OUT RISER SHALL BE THE SAME SIZE AS THE SEWER LATERAL.
2. CLEAN-OUT SHALL BE LOCATED AT BACK OF SIDEWALK.
3. ANY DEVIATION FROM THIS STANDARD MUST HAVE THE APPROVAL OF THE CITY ENGINEER.
4. CLEAN-OUT RISER COMBINATION MAY BE CAST IRON, PLASTIC, OR VITRIFIED CLAY PIPE.
NOTES

1. CLEAN-OUT RISER SHALL BE THE SAME SIZE AS THE SEWER LATERAL.
2. CLEAN-OUT SHALL NOT BE LOCATED MORE THAN 24" FROM THE BACK OF SIDEWALK.
3. CLEAN-OUT RISER MAY BE DUCTILE IRON, A.B.S. (S.D.R. 35) SOLID WALL PIPE, P.V.C.
   (S.D.R. 23.5), OR VITRIFIED CLAY PIPE.
4. PRIOR TO INSTALLATION, INSTALLER MUST OBTAIN AN ENCROACHMENT PERMIT FROM THE
   CITY OF MANTECA PUBLIC WORKS DEPARTMENT.
5. CLEAN-OUTS WITHIN THE STREET RIGHT OF WAY MUST BE INSTALLED BY A LICENSED
   CONTRACTOR.
6. THE CITY MAINTAINS SEWER LATERALS DOWNSTREAM FROM CLEAN-OUTS LOCATED WITHIN
   24" FROM THE BACK OF SIDEWALK. PROPERTY OWNERS MUST MAINTAIN SEWER LATERALS
   UPSTREAM FROM THE CLEAN-OUT. SEWER LATERALS WITHOUT CLEAN-OUTS, OR WITH
   CLEAN-OUTS LOCATED GREATER THAN 24" FROM THE BACK OF SIDEWALK MUST BE
   MAINTAINED THEIR FULL LENGTH BY THE PROPERTY OWNER.
NOTES:

1. BREAK OUT PORTION OF MAIN TO FIT LATERAL.
NOTES:

1. TWO FOOT BREAK IN BUILDING SEWER LINE SHALL BE LEFT UNCOVERED UNTIL SEWER ALLOCATION IS GRANTED.
2. FINAL CONNECTION SHALL NOT BE MADE UNTIL SEWER ALLOCATION IS GRANTED. A FINAL INSPECTION WILL BE PERFORMED AT THAT TIME.