

See Drawings

SPECIFICATIONS FOR BUILDING SEWER CONSTRUCTION

RICHARDSON BAY SANITARY DISTRICT

ALMONTE SANITARY DISTRICT

Specifications for Installation of Building Sewers

All building sewers installed within the District shall conform to the following minimum standards and requirements.

I. PROCEDURESA. Jurisdiction

All property to be served shall be within the Richardson Bay Sanitary District boundaries. The District has jurisdiction over all private building sewers from a point two (2) feet or less outside the building foundation to the point of connection to the District sewer system. District jurisdiction includes, but is not limited to, issuance of permits to construct, specification of design, type of material and construction requirements as well as inspection and testing.

B. Ownership

All private sewers, building sewers, or pumping or lift systems from inside the structures to the point of connection to the District system are owned privately and are to be maintained by the owner of the property served.

C. Liability

The District and its officers and employees shall not be liable for injury or death to any person or damage to any property arising during, or growing out of, the performance of any work described in this ordinance.

D. Permit Required

Prior to installation of any new building sewer or plumbing alteration, a sewer connection permit must be secured from the District Office.

Note: New plumbing or plumbing changes within the building come under jurisdiction of the Town of Tiburon or Marin County Building Department and will require a separate permit from these agencies.

E. Compliance with Regulations

Any person constructing a sewer within a street shall comply with all State, County, or City laws, ordinances, rules and regulations pertaining to the cutting of pavement, opening, barricading, lighting and protection of trenches, backfilling and repaving thereof and shall obtain all permits and pay all fees required by the department having jurisdiction prior to the issuance of a permit by the District. Any

person requesting a permit shall also comply with all applicable guidelines, including the Local Guidelines of District, adopted pursuant to the Environmental Quality Act of 1970, and shall make all deposits required and pay all fees which may be established by the District to process applications to comply with said Act. The plumber must have a copy of all necessary permits on the job when the building sewer is being constructed.

F. Plan Required

A plan showing the location of the proposed structure and location of the building sewer on the property shall be furnished to the District at the time the sewer connection permit is issued. The plan shall show the envelope of the building, all easements, and the depth and grade of the proposed building sewer. The District Inspector or District Engineer may require a survey by a registered land surveyor or engineer if it is necessary to ascertain the location of property lines or easements. The plumber must have this plan on the job when the building sewer is being constructed.

G. Inspection

All building sewers shall be inspected by the District Inspector prior to the backfilling and shall be tested for watertightness in the presence of the District Inspector. Inspections must be arranged twenty-four (24) hours before the work is to be inspected, Sundays and holidays excluded. District Office shall advise the owner or agent the approximate time inspection will be made. A surcharge of \$50 per return inspection shall be charged for return inspections.

H. Location of Building Sewer

It is the responsibility of the property owner or his contractor to locate and uncover the building sewer or wye installed to serve the property. If no building sewer or wye can be found even though the District records indicate such a connection, the building sewer shall be connected to the District system at a location designated by the District Inspector or District Engineer at the expense of the permittee.

I. Main Line Taps

Special permission must be obtained from the District to make a tap or connection to the District's public sewer. Connection to a public sewer may be permitted only after field inspection of the condition by the District Inspector and a finding that no wye or building sewer was installed. Each connection when permitted shall be made only in the presence of and at the direction of the District Inspector. On 6-inch sewers, installation of a wye will be required; on larger pipes, a tap may be made using epoxy adhesive to seal the connection. A "Tap Tite" or equal pipe penetration type of connection on sewers larger than 6" may be used upon receiving permission in advance from the District Inspector or District Engineer.

J. Sewage Pumps

Special application must be made for installation of an individual sewage pumps where gravity service is not feasible. All pumping systems shall be installed in accordance with all applicable codes. The District will only inspect the pressure line from the sewage pump to the point of connection to the District sewer system.

K. Service to More Than One Dwelling

Service to more than one dwelling with a single sewer requires either special permission from the District or a separate public sewer main extension as set forth in the Sanitary Code of Richardson Bay Sanitary District.

II. DESIGN REQUIREMENTS

A. Pipe Size

The minimum size of a building sewer serving up to one hundred fifty (150) fixture units shall be 4" inside diameter. The minimum size of a building sewer serving more than one hundred fifty (150) fixture units shall conform to the size requirements for horizontal drainage piping based on fixture unit loading as given in the Uniform Plumbing Code. In no event shall a building sewer connect to a sewer of a lesser size on the downstream side.

B. Minimum Pipe Slope

The minimum grade of a building sewer shall be ¼-inch per foot (2.0%).

C. Minimum Pipe Cover

The minimum cover over the top of a building sewer shall be:

1. 18 inches within the owner's premises
2. 30 inches within an easement outside the owner's premises
3. 48 inches within a street right-of-way

Where the above minimum pipe covers cannot be obtained, special pipe bedding and/or concrete encasement may be required by the District Inspector or Engineer.

D. Gravity Sewers

The following are acceptable pipe and joint materials.

PIPE MATERIALS

14-01 Description. Sewer pipelines shall be installed as shown on the plans and in accordance with the following provisions, the Special Provisions, and as directed by the District.

14-02 Approved Sewer Pipe Materials. The approved pipe materials for laterals and for private side sewer/lateral construction are listed in Table 1 and approved pipe materials for public sewer mains and force mains are listed in Table 2. The specific use of pipe and pipe products are subject to approval by the District. Use of pipe other than those specified hereinbelow must be reviewed by the District and specifically authorized in writing. All pipe shall be of the size, materials, and strength classifications shown on the plans or specified herein.

**TABLE 1
PRIVATE SIDE SEWER/LATERAL
(Specific Use Subject to District Approval)**

* Pipe Specifications	Can Be Used for Gravity Sewers	Can Be Used for Ejector Pump Discharge Pipelines
Vitrified Clay Pipe (No Hub), VCP	Yes ¹	No
Cast Iron Soil Pipe (No Hub), CIP	Yes ²	No
Ductile Iron Pipe w/Rubber Ring Joints, DIP	Yes ²	No
PVC ASTM D-2241, SDR=26	Yes ¹	Yes ¹
PVC AWWA C-900, SDR=21	Yes ²	Yes ²
PVC Sch 40	Yes ¹	Yes ¹
PVC Sch 80	Yes ²	Yes ²
Polyethylene, min SDR=17	Yes ¹	Yes ¹

¹ Requires minimum 3-foot cover with imported bedding and pipe zone backfill.

² Requires minimum 18-inch cover on private property with imported bedding and pipe zone backfill or shaded with select native material containing rocks no larger than 1" sieve size.

* Pipe Specifications can depend on terrain and soil conditions.

Pressure Sewers

The pressure portion of the discharge line shall be equal in size to the pump discharge. The pipe shall have a working pressure rating not less than 150 psi. The test pressure shall be 50 psi.

III. CONSTRUCTION

A. Laying Pipe

Building sewers shall be laid by the shortest route from the plumbing outlet to the sewer connection. All pipe shall be laid accurately to line and grade. Each length of pipe shall be laid on a firm bed as detailed in Drawing No. 1 and shall have full bearing for its entire length between bells. An adequate bell hole shall be dug at the end of each pipe length for making the joint. Both bell and spigot shall be clean before the joint is made and care shall be taken that no foreign materials enters the pipe. Water shall be pumped from the trench while the pipes are laid and the joints made. Backfill shall be carefully and uniformly placed around the pipe, and no rocks or clods allowed to touch the pipe. In rocky areas imported bedding material may be required. Pipe shall not be covered until inspected by the District Inspector.

B. Cleanouts

Cleanouts shall be installed at the following locations:

1. A tee or wye fitting shall be installed at the junction of the building sewer at property line. This fitting shall be used for inserting test plug after which it shall be permanently sealed, unless otherwise required.
2. At the junction of the house plumbing and building sewer two (2) feet outside the building.

3. At each bend or change in direction of the building sewer 22-1/2° or over.

4. Where a run of pipe without bends exceeds one hundred (100) feet.

Note: Cleanouts shall be brought to grade, properly capped, and completely watertight.

C. Backwater Valves

The District requires the installation of an approved backwater device. The approved backwater device shall be installed as detailed in Drawing No. 2. The elevation of the backwater valve rim shall be at least twelve (12) inches below the lowest plumbing fixtures. If the building does not have an approved backwater device installed, one shall be installed as a required condition for the issuance of a permit by the District.

D. Testing of Gravity Sewers

All building sewers shall be tested by plugging and filling with water or with compressed air to five (5) psi, as directed by the District Inspector or Engineer. Water leakage shall not exceed one hundred (100) gallons per day per inch of diameter per mile of sewer main being tested (0.3 gallons per hour per 100 feet of 4-inch diameter pipe). When an air test is made, the pressure must not dip over a fifteen (15) minute test period.

E. Testing of Pressure Sewers

Pressure sewers shall be tested under a water pressure not less than the working pressure under which it is used. A one hundred (100) pounds per square inch air pressure may be substituted for the water test. In either method, the piping shall withstand the test without leaking for a period of not less than fifteen (15) minutes.

F. Existing Septic Tanks

When an existing septic tank is being abandoned or when one is encountered during the work, the following procedures should be followed:

1. All building sewers shall completely bypass the septic tank.
2. All septic tanks shall be pumped out and cleaned.
3. All septic tanks shall be filled with crushed rock or pea gravel or otherwise made safe.
4. All septic tanks shall be abandoned per the Uniform Plumbing Code and County Health Department regulations.

The County Health Department shall be notified when a septic tank is being abandoned or is encountered. The County Health Department's standards must also be followed.

G. Trenches for Building Sewers Excavated and Backfilled

Trenches for building sewers within public streets shall be excavated and backfilled and the pavement restored in strict accordance with the laws, ordinances and regulations of the State of California, County of Marin, Town of Tiburon, or any department, authority or agency or either having jurisdiction over such street.

H. Special Conditions

When special construction conditions are encountered which are not covered in these specifications, the District Inspector or Engineer will direct the permittee in the required procedures.

I. Permit Expiration

If work under a permit is not completed within one (1) year from the date of issuance, after partial completion, the permit shall thereupon become void and the fee paid shall be returned to permittee, less a \$100 service charge to be retained by the District. Further work shall not be done until a new permit has been secured and a new permit fee paid.

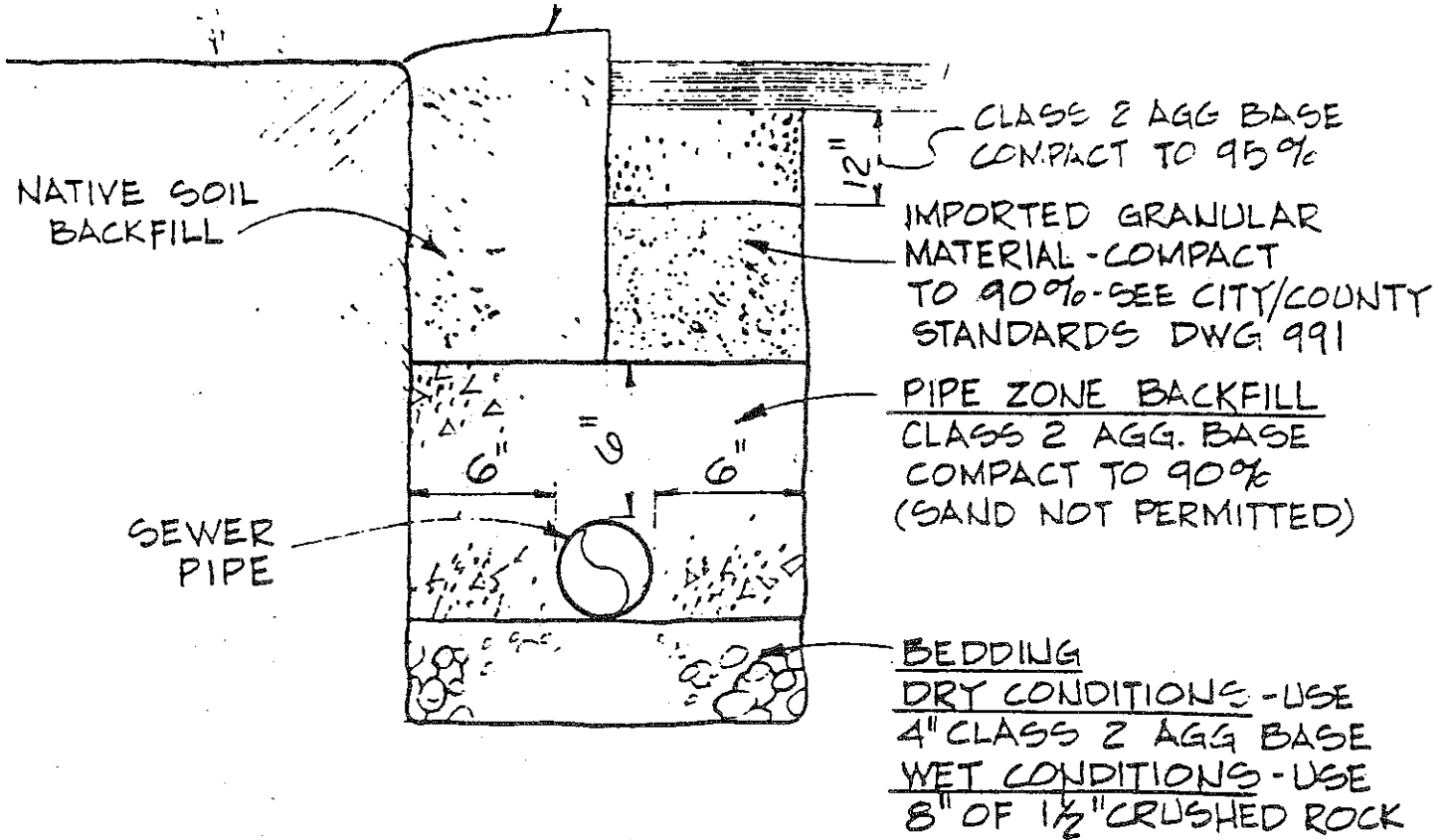
J. Permits are Non-Transferable

Permits issued by the District shall be for the property for which the permit was issued and shall not be transferred to another property without written approval of the Sanitary District Board. The permit shall show the name of the permittee and shall identify the property by Assessor's Parcel Number.

← ON PRIVATE PROPERTY
OR IN EASEMENTS

IN PUBLIC RIGHT OF WAY
CONFORM TO CITY/COUNTY
STANDARDS FOR SURFACE
RESTORATION - DWG. 991 →

MOUND EARTH
OVER TRENCH

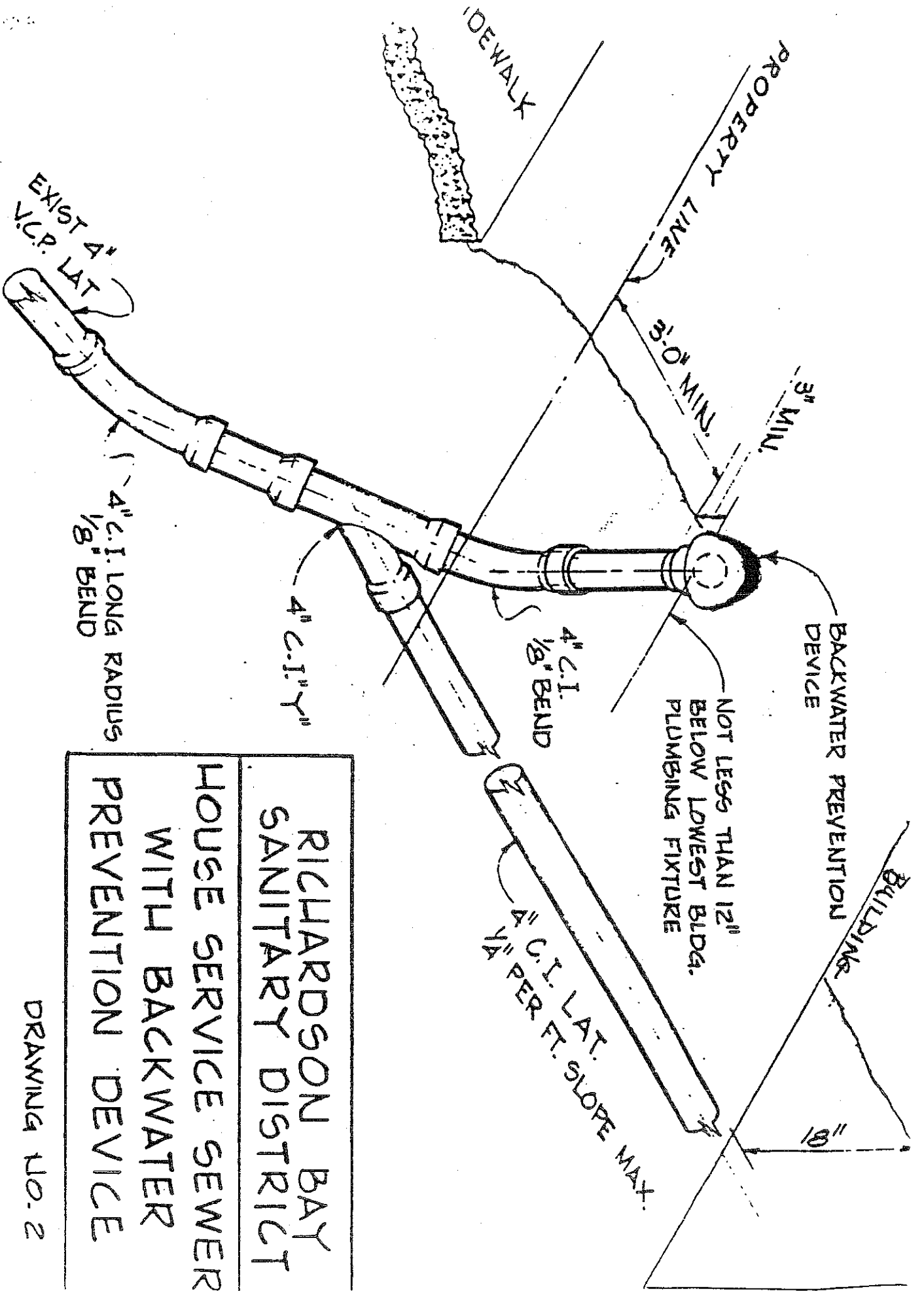


BEDDING DETAIL

NOT TO SCALE

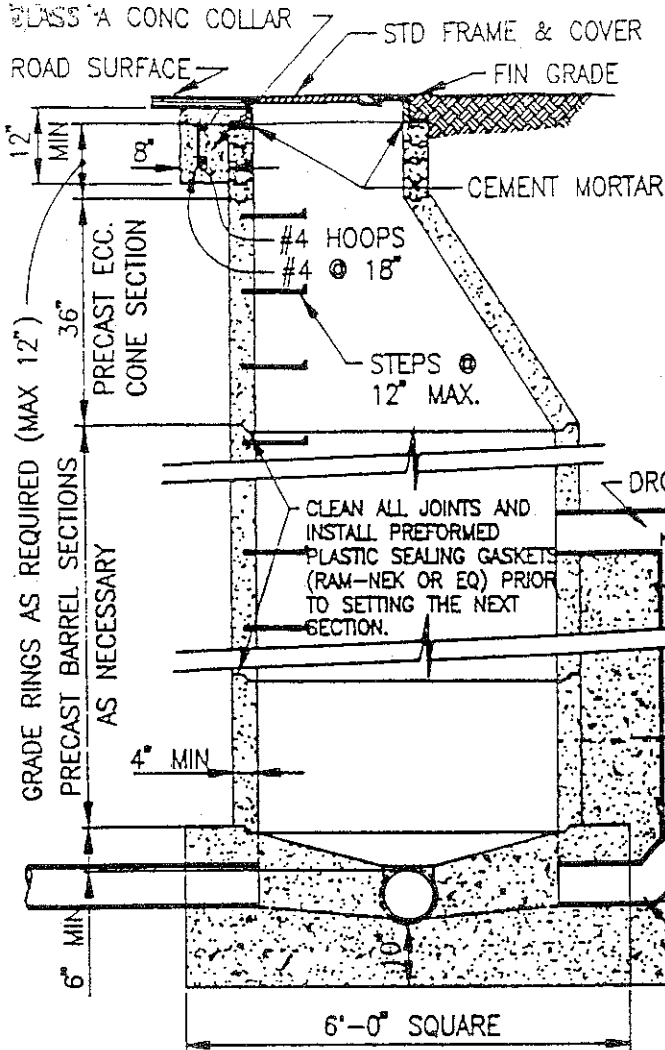
RICHARDSON BAY
SANITARY DISTRICT
STANDARD PIPE
BEDDING DETAIL

DRAWING NO. 1



RICHARDSON BAY
 SANITARY DISTRICT
 HOUSE SERVICE SEWER
 WITH BACKWATER
 PREVENTION DEVICE

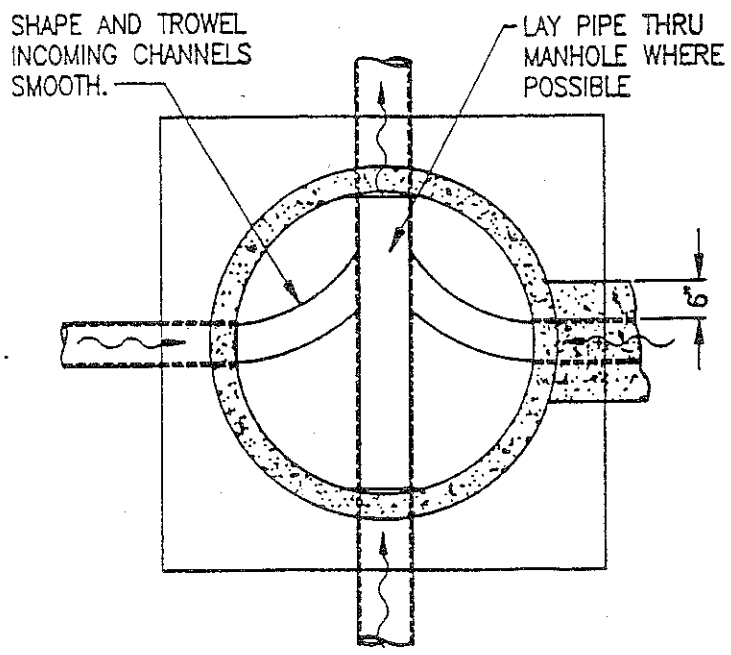
DRAWING NO. 2



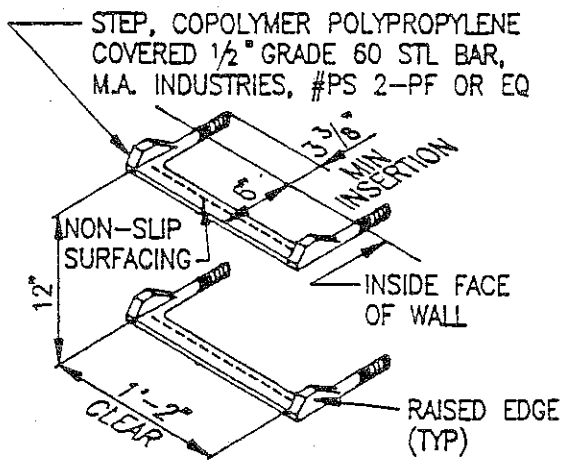
NOTES:

1. MANHOLE BASE SHALL BE CLASS A (6-sack) CONCRETE AND SHALL BE POURED AGAINST UNDISTURBED SOIL.
2. PRECAST CONCRETE CONE, BARREL AND GRADE RINGS SHALL CONFORM TO A.S.T.M. Spec C-478, EXCEPT THAT TYPE II Modified PORTLAND CEMENT SHALL BE USED.
3. STEPS SHALL BE POLYPROPYLENE REINFORCED WITH 1/2" GRADE 60 STEEL BAR AS DETAILED BELOW, #PS 2-PF AS MANUFACTURED BY M.A. INDUSTRIES OR EQ.
4. FRAME AND COVER MAY BE ADJUSTED TO GRADE LEVEL EITHER BEFORE OR AFTER PAVING, BUT FINAL GRADE SHALL CONFORM TO ADJACENT FINISH PAVEMENT GRADE WITHIN 1/8".
5. ECCENTRIC CONE SECTION SHALL BE POSITIONED AS DIRECTED BY THE DISTRICT.
6. WHERE FRAME AND COVER IS SET AFTER PAVING, THE CONCRETE COLLAR SHALL BE BROUGHT TO FINISH GRADE AND THE EXPOSED CONCRETE SURFACE SHALL BE COLORED WITH LAMPBLACK.
7. RECESS IN MANHOLE BASE SHALL BE FORMED WITH AN APPROVED METAL FORMING RING TO RECEIVE PRECAST MANHOLE JOINT. PREFORMED PLASTIC SEAL GASKET SHALL BE INSTALLED BEFORE PLACING FIRST BARREL SECTION.
8. PRECAST MANHOLE BASES ARE NOT ALLOWED.

SECTION



PLAN OF BOTTOM

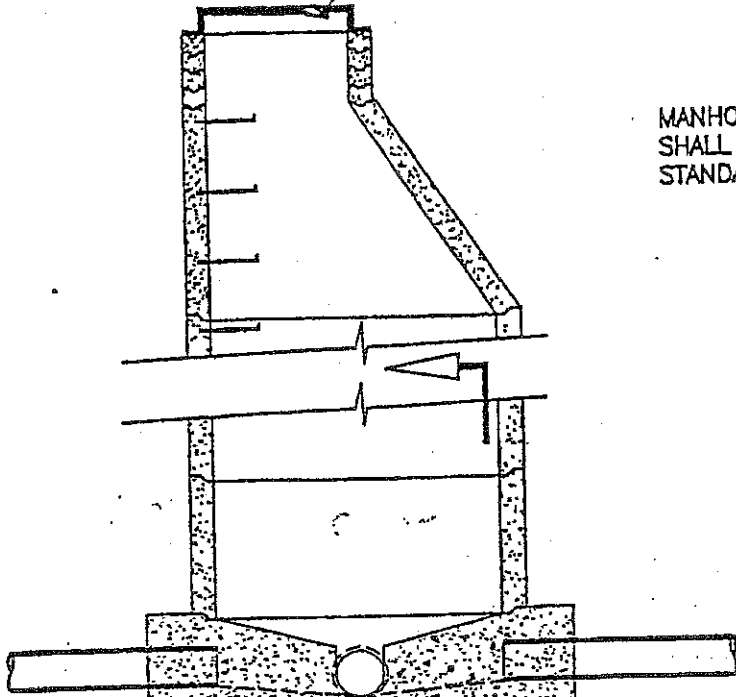


MANHOLE STEPS

RICHARDSON BAY SANITARY DISTRICT
 100 TIBURON BOULEVARD
 TIBURON, CA 94920
 STANDARD DROP MANHOLE

STD FRAME & COVER

MANHOLE BASE, CONE AND BARREL
SHALL BE CONSTRUCTED PER
STANDARD DETAIL SD 2.0



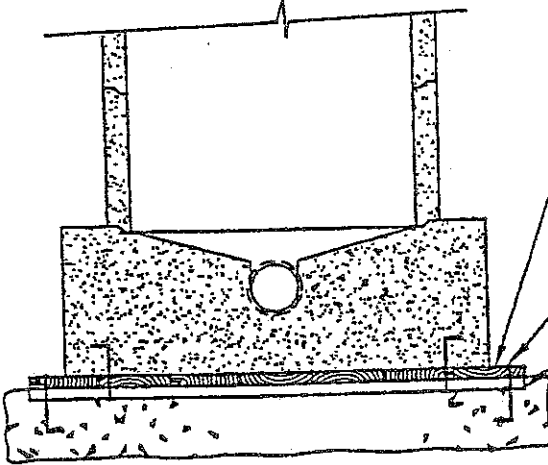
SECTION

7 - 2" x 12" REDWOOD PLANKS,
SPIKED THRU CLEATS W/ MINIMUM
OF 3- #16 H.D. GALV SPIKES EA END

2 - 2" x 12" REDWOOD CLEATS

12" QUARRY WASTE ROCK, OR
12" - 1 1/2" ROCK IN WET CONDITIONS.

FORM GROOVES IN CLASS II MATERIALS
FOR BOTTOM CLEATS ON COMPACTED
MATERIAL



SECTION

REDWOOD PLANKS

LAY BENT SPIKES TYP EACH END
INTO ROCK AND CONCRETE FORM

REDWOOD CLEATS

RICHARDSON BAY SANITARY DISTRICT

300 TIBURON BOULEVARD

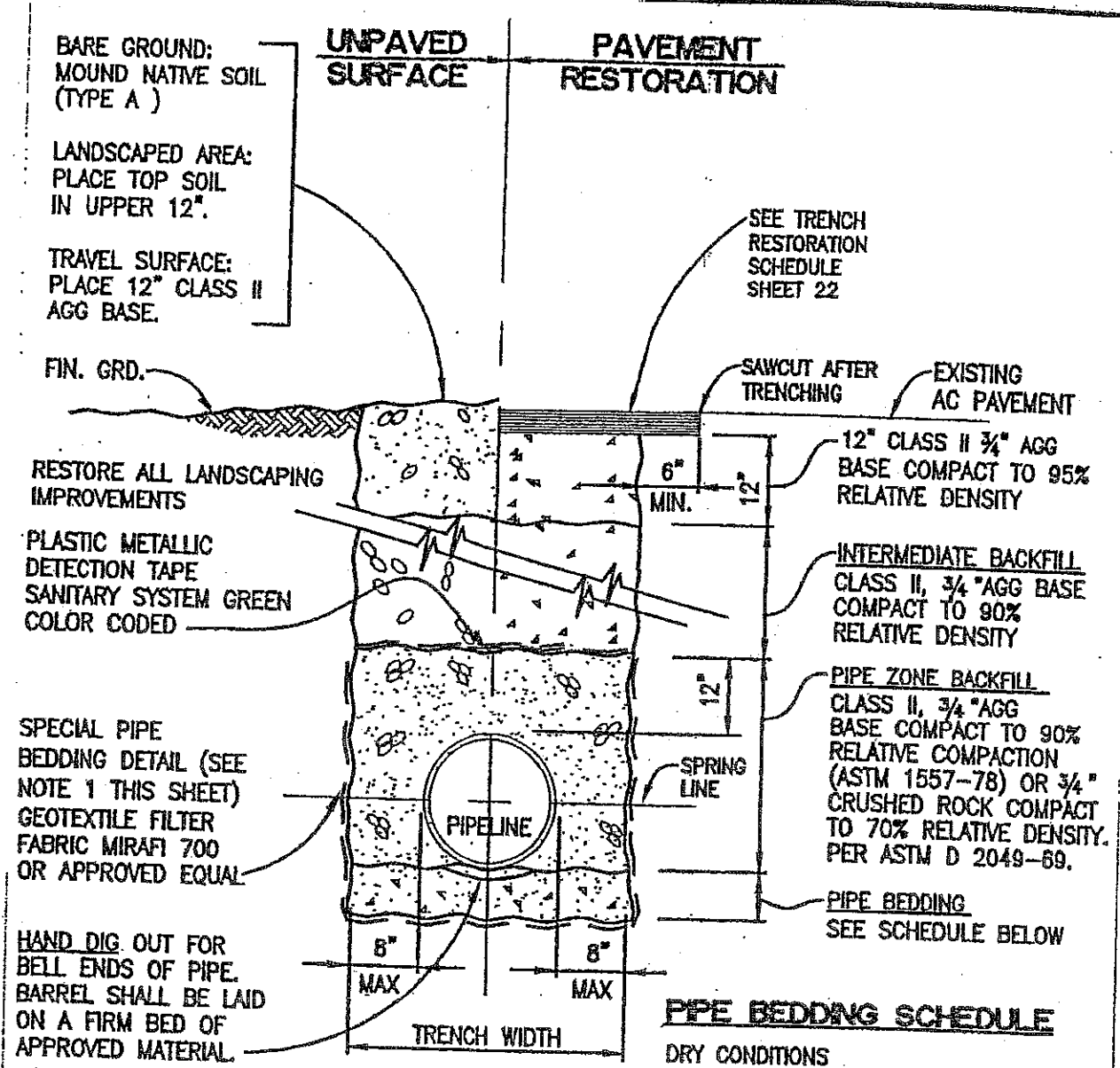
TIBURON, CA 94920

MARIN COUNTY, CALIFORNIA

MANHOLE BASE
IN BAY MUD

1996

SD 23



BARE GROUND:
MOUND NATIVE SOIL
(TYPE A)

LANDSCAPED AREA:
PLACE TOP SOIL
IN UPPER 12".

TRAVEL SURFACE:
PLACE 12" CLASS II
AGG BASE.

UNPAVED SURFACE **PAVEMENT RESTORATION**

SEE TRENCH RESTORATION SCHEDULE SHEET 22

SAWCUT AFTER TRENCHING EXISTING AC PAVEMENT

RESTORE ALL LANDSCAPING IMPROVEMENTS

PLASTIC METALLIC DETECTION TAPE
SANITARY SYSTEM GREEN
COLOR CODED

SPECIAL PIPE BEDDING DETAIL (SEE NOTE 1 THIS SHEET)
GEOTEXTILE FILTER FABRIC MIRAFI 700 OR APPROVED EQUAL

HAND DIG OUT FOR BELL ENDS OF PIPE. BARREL SHALL BE LAID ON A FIRM BED OF APPROVED MATERIAL.

12" CLASS II 3/4" AGG BASE COMPACT TO 95% RELATIVE DENSITY

INTERMEDIATE BACKFILL CLASS II, 3/4" AGG BASE COMPACT TO 90% RELATIVE DENSITY

PIPE ZONE BACKFILL CLASS II, 3/4" AGG BASE COMPACT TO 90% RELATIVE COMPACTION (ASTM 1557-78) OR 3/4" CRUSHED ROCK COMPACT TO 70% RELATIVE DENSITY. PER ASTM D 2049-89.

PIPE BEDDING SEE SCHEDULE BELOW

PIPE BEDDING SCHEDULE

DRY CONDITIONS
6" - 3/4" CRUSHED ROCK

WET CONDITIONS AND BAY MUD CONDITIONS
12" - 3/4" CRUSHED ROCK

- NOTES:
1. COMPACT ALL CRUSHED ROCK TO 70% RELATIVE DENSITY PER ASTM D 2049
 2. WHERE A ROAD GRIND IS SPECIFIED THE TOTAL AC THICKNESS OVER THE TRENCH SHALL BE 4"
 3. CONSULT LOCAL JURISDICTION FOR ASPHALT CUTTING REQUIREMENTS.

RICHARDSON BAY SANITARY DISTRICT
500 TIBURON BOULEVARD
TIBURON, CA 94920
Marin County, California

TYPICAL TRENCH SECTION		
2005		SD-4.1