

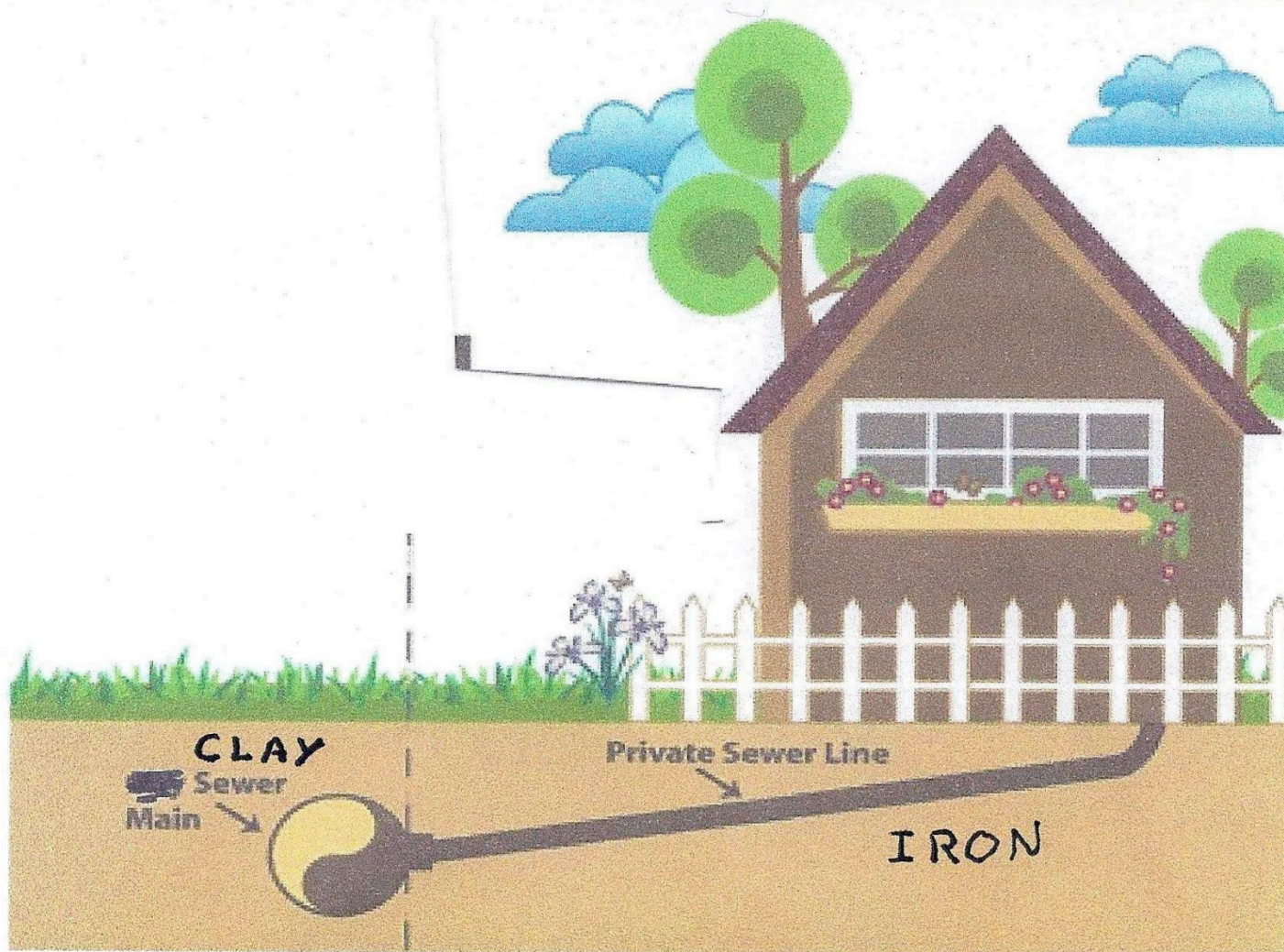
# MANAGER REPORT

## SEWERS 2011

The VGOA is responsible for approximately 4.3 miles of sewer lines.

*Disclaimer:* The information contained in this report is accurate as of November 2011. It is representative of general conditions only and should not be relied upon by Village Green owners, residents, or anyone else with respect to the specific circumstances of any particular court, building or unit within the Village Green community. Such individual questions should be directed to Village Green management.

Iron sewer lines run from each building to a 6" clay pipe which then runs to the city sewer lines.





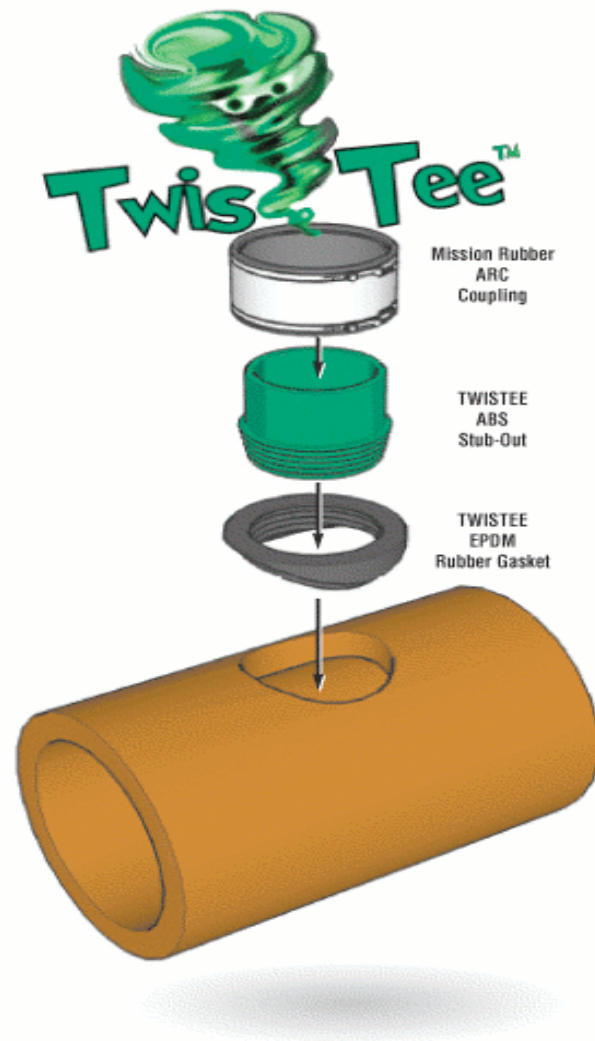
# Main Sewer Line 6" Clay Pipe



4” Iron Waste/Sewer Pipes called “Laterals”  
run from building to VGOA main sewer lines.



# Iron to Clay Connections





# Coupling with Stainless Steel Clamps



Lateral pipe installation with feeds going to sinks and bathrooms.



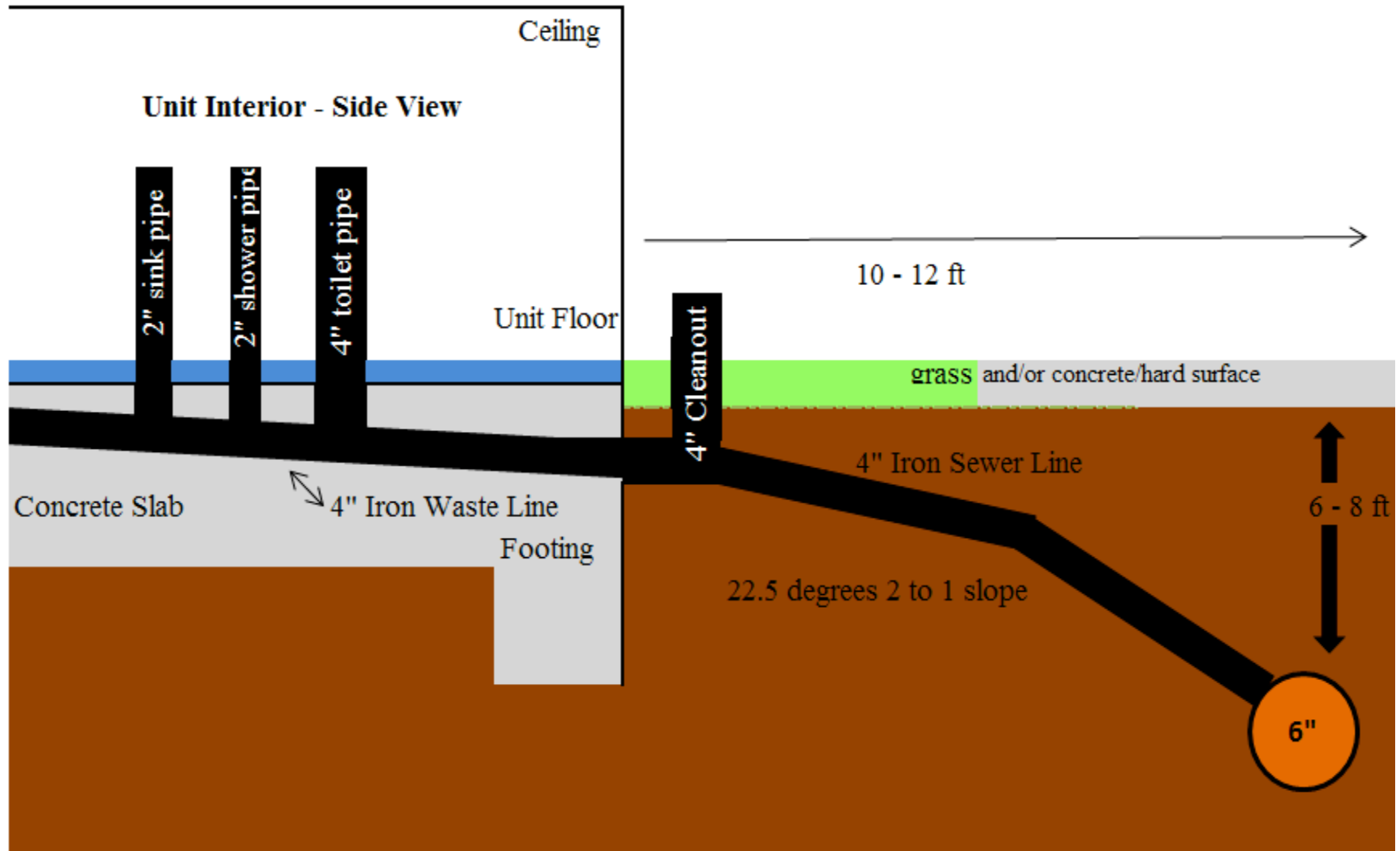
**Illustration Only - Non Specific Court  
(Viewed Looking Down)**



**Each building has between 3 - 10 Laterals depending on the number of units. Average about 6.  
Each Lateral will have a Cleanout when completed.**

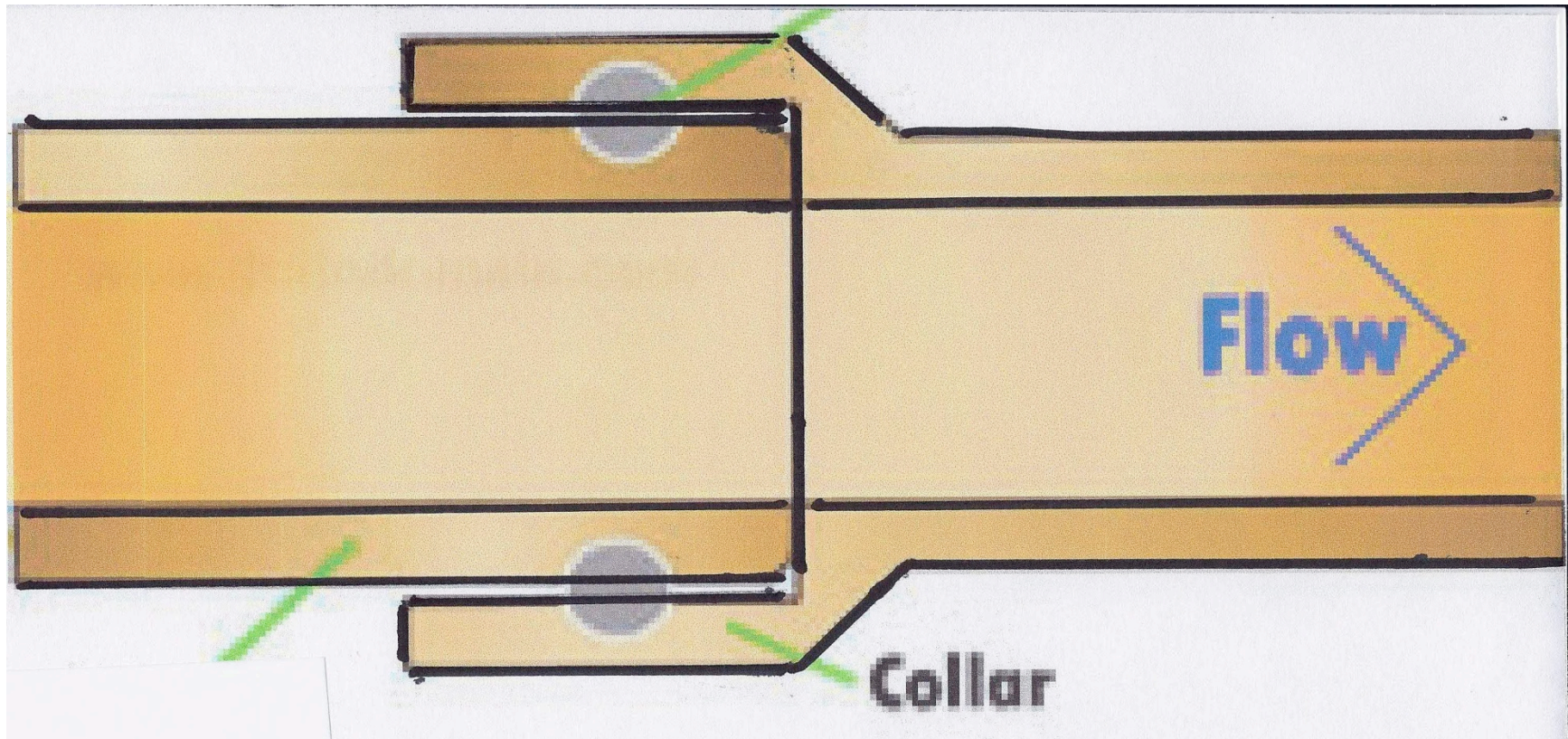


## Typical Unit Sewer Layout



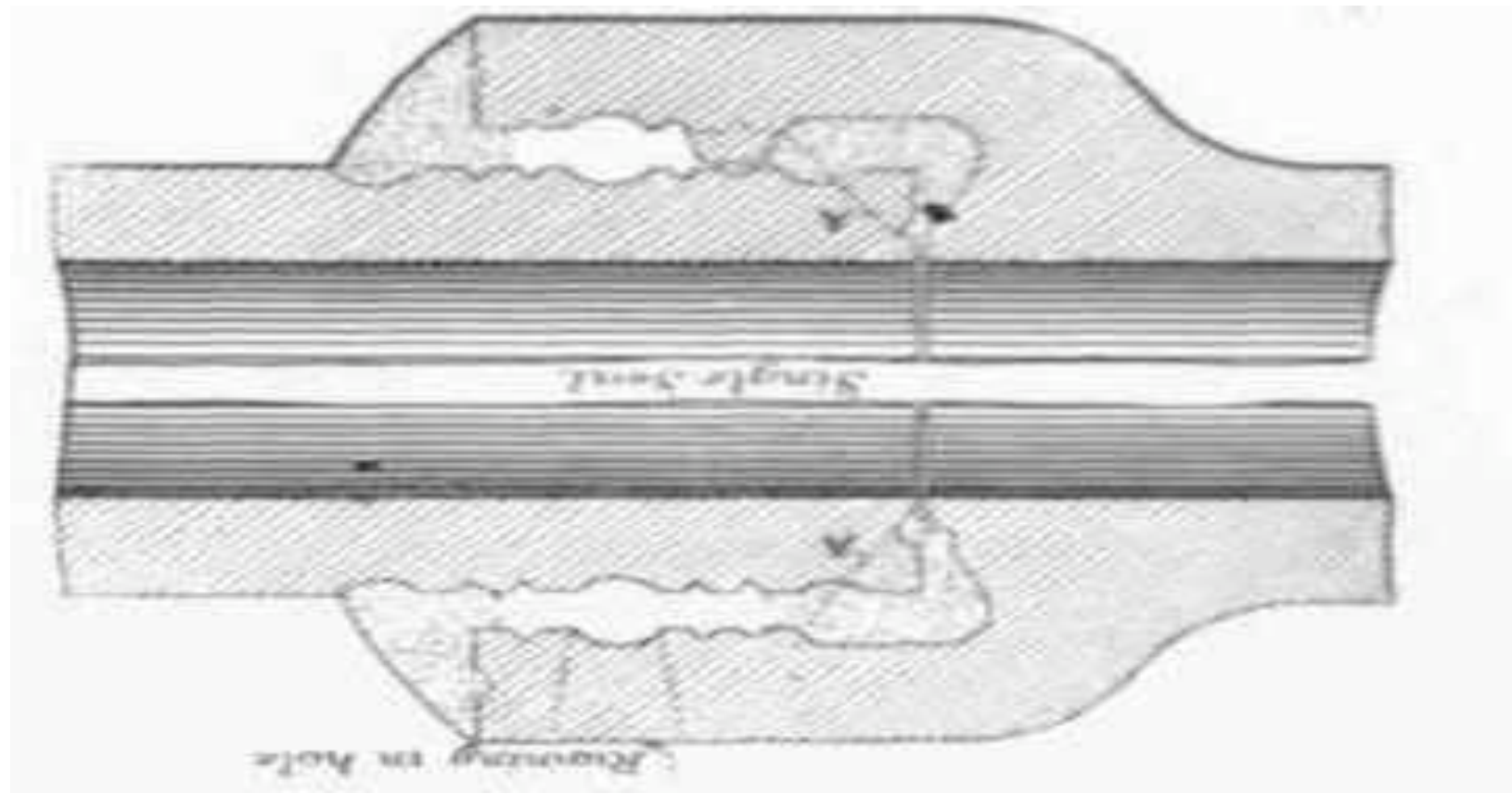
# Problems

New Clay pipe connections are tight and the pipe is undamaged.

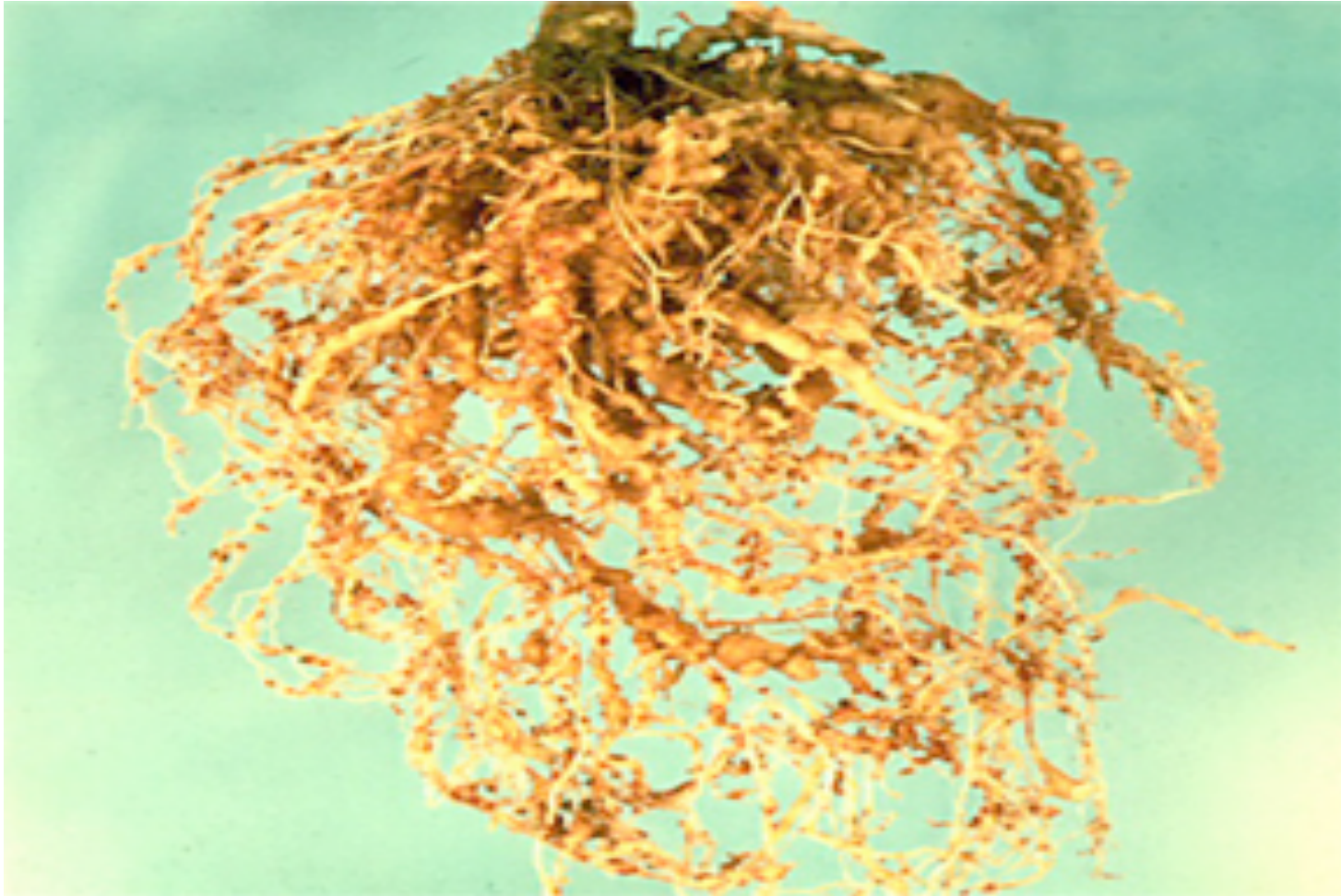




Old Clay connections become loose due to vibrations, settling and earthquakes.



Roots are the primary enemy of sewer lines.



Roots find their way into the smallest cracks in pipes; once in, they grow very rapidly and clog the pipes.

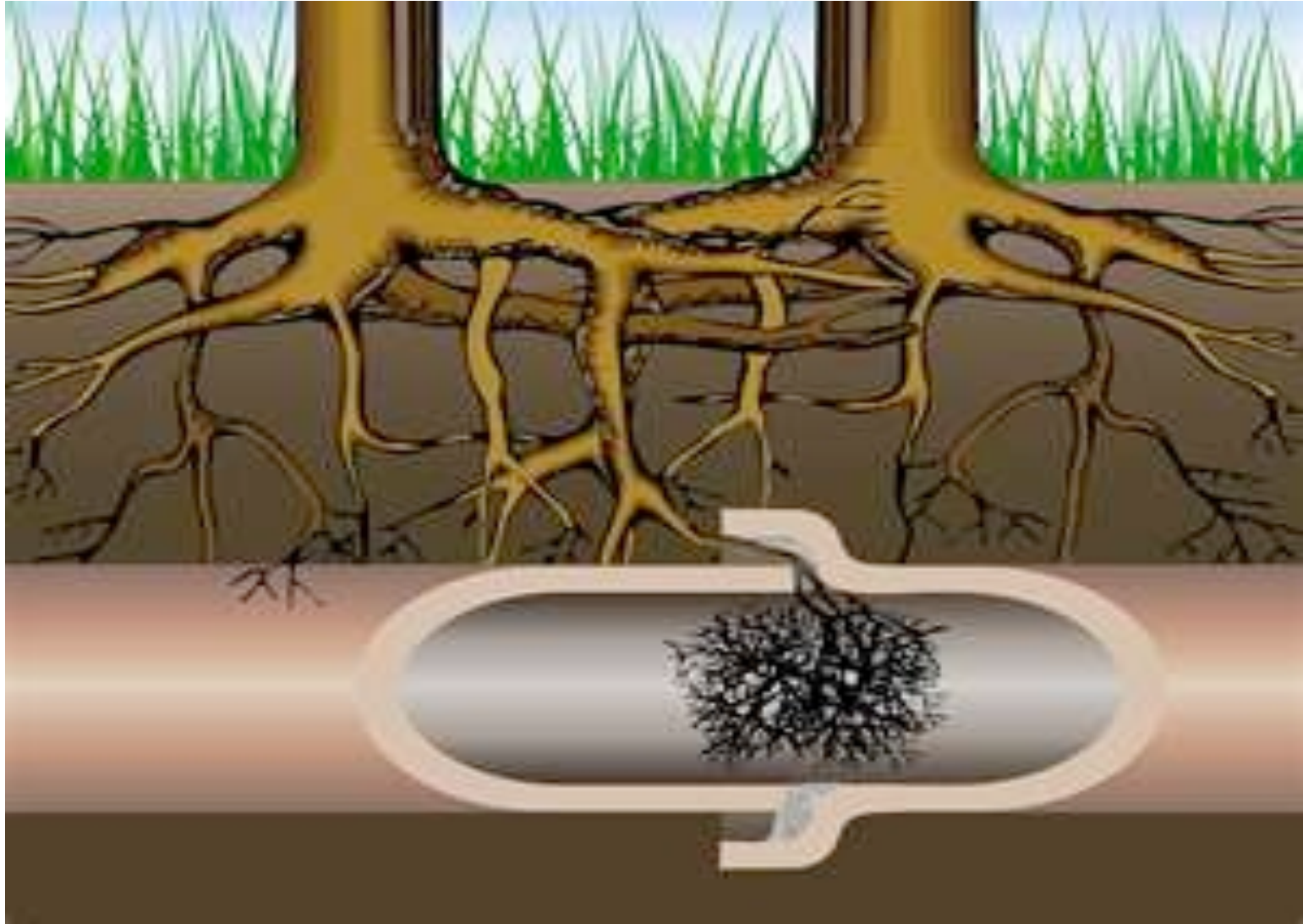




Photo of interior of typical VGOA clay pipe which has been cleaned. Note the number of cracks.



**Photo of the interior of a typical VGOA worn Iron pipe after it has been cleaned. In some areas more than 60% of the pipe is worn away.**



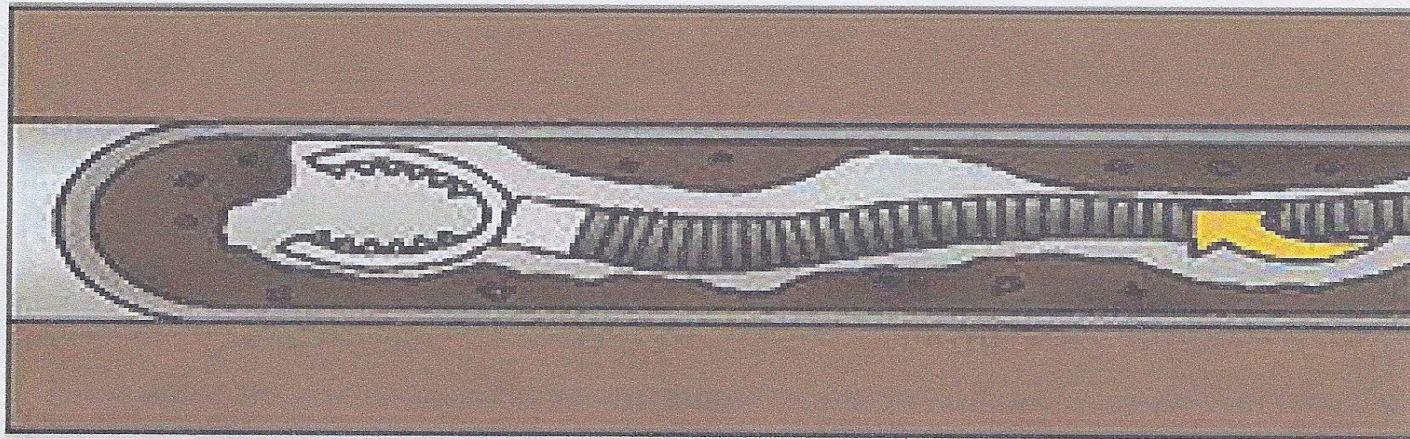
# Addressing Problem Lines

Clean the lines.

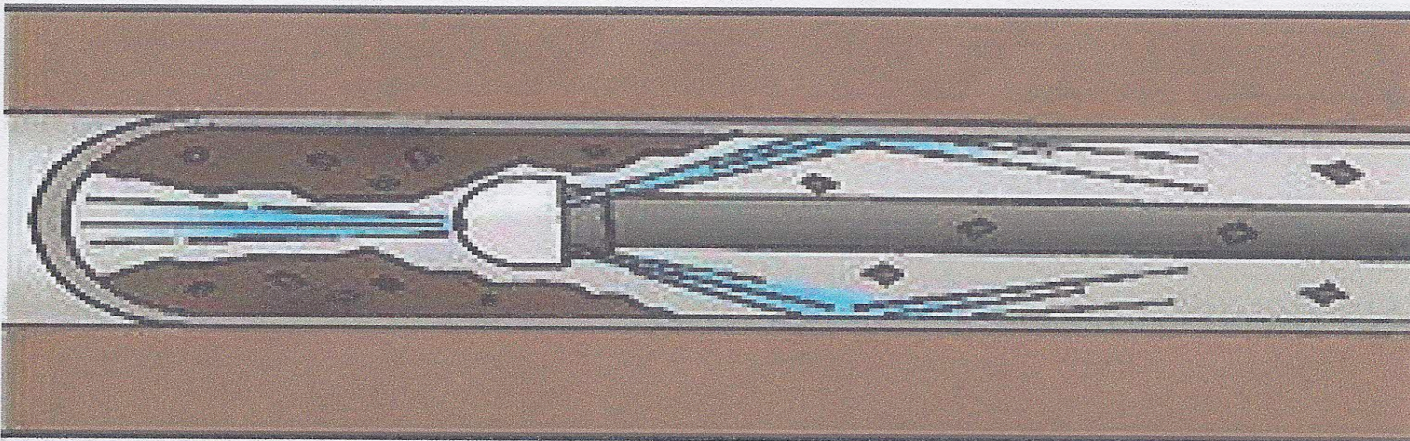
Repair the lines.



**Cleaning the Lines is a temporary cure to a blockage problem and does not address the cause of the problem.**



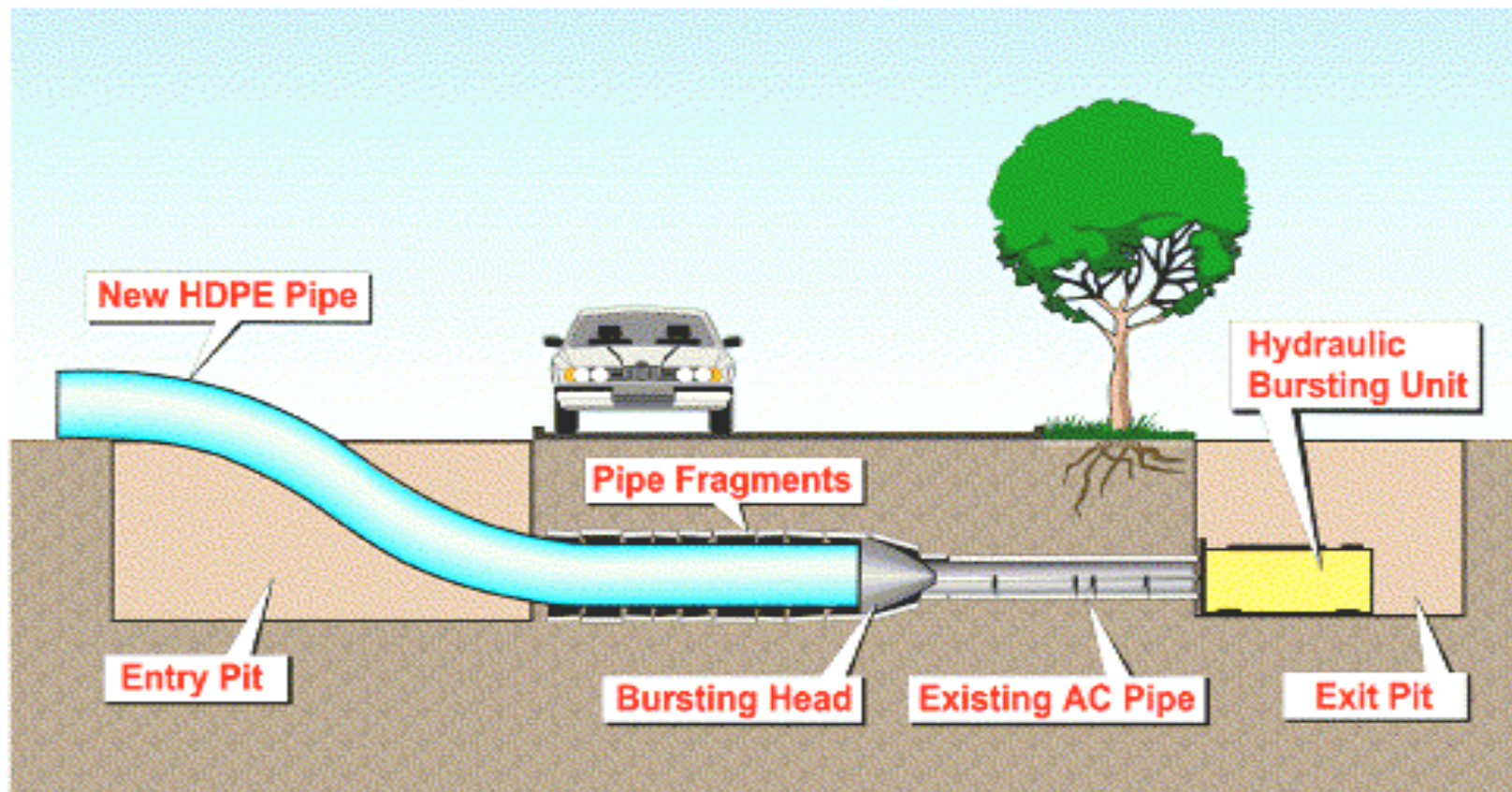
Opening with cable



Opening with Hydro Flush



**The most cost effective method to repair the main 6" & 8" sewer lines is to insert a new high-density polyethylene (HDPE) plastic-type pipe through the existing pipe. This is called "trenchless technology." The plastic type pipe is much stronger than the existing pipe and the final installation is much better than the original system.**



**The new pipe is pulled through the old pipe via a powerful hydraulic powered bursting head.**

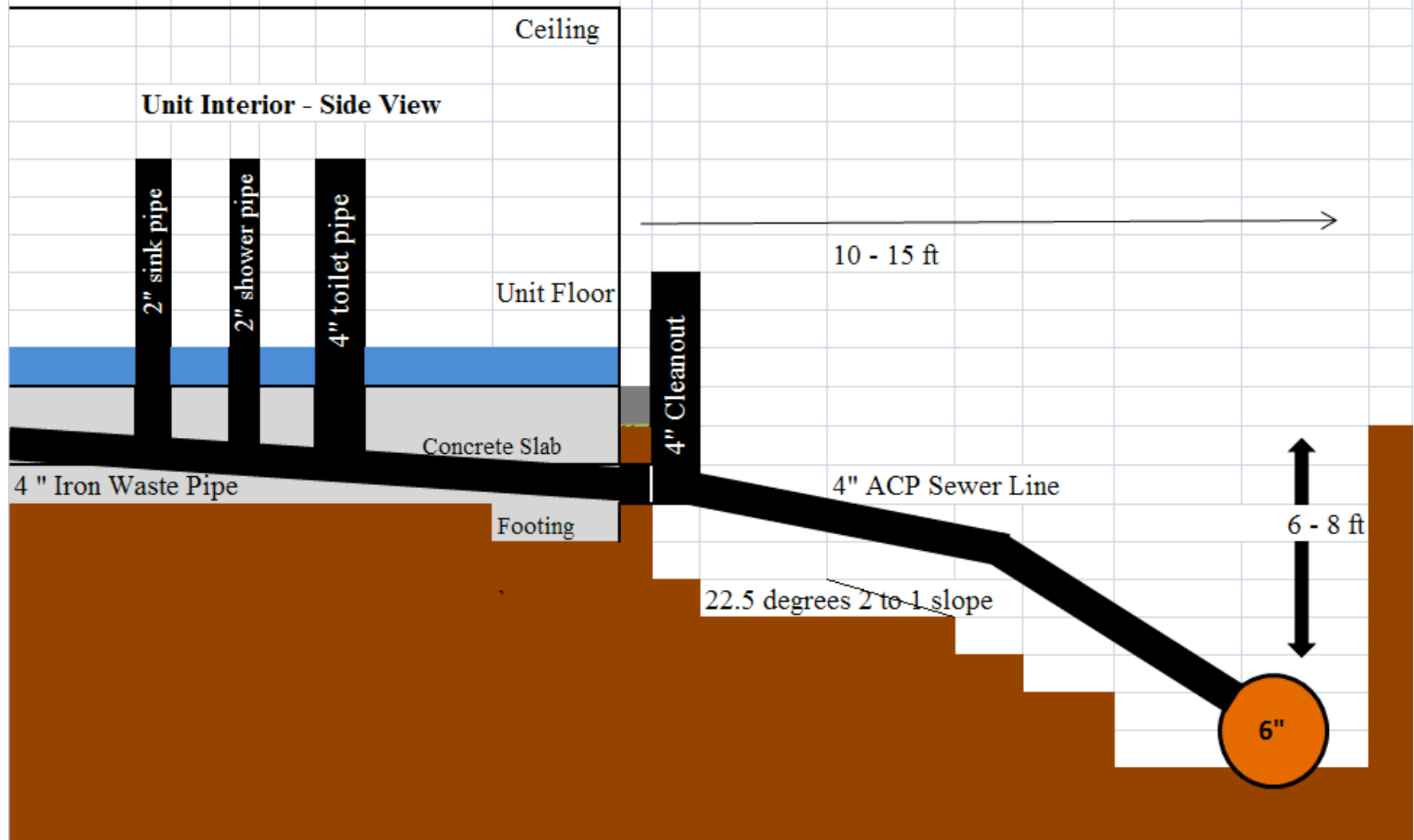




**A lot of specialized sophisticated equipment is required for this work**



**Lateral replacement requires old fashion trenching/digging. Most Laterals are in patio areas.**

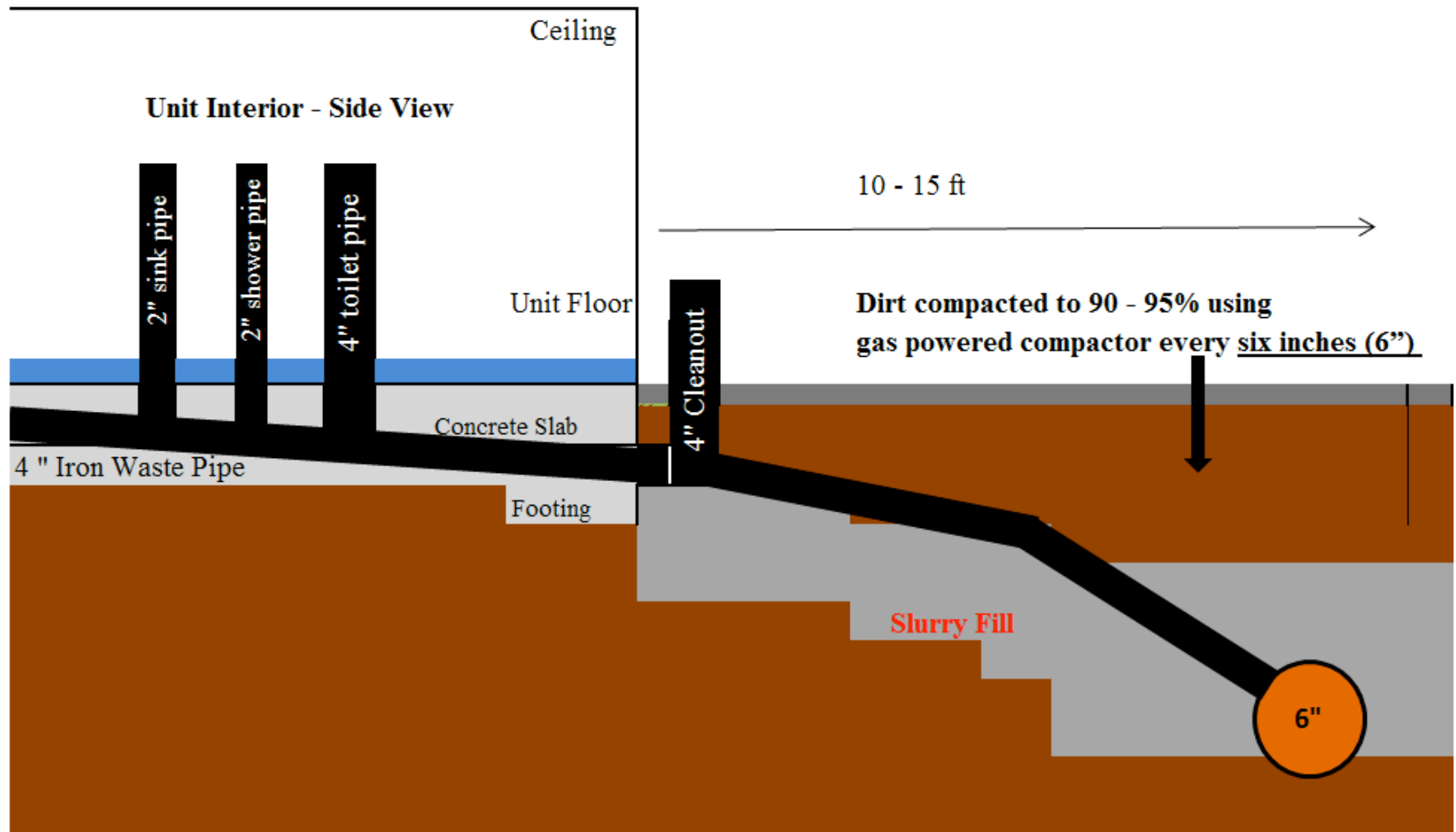




**After Lateral replacement proper backfilling of trenches is very important to protect the buildings and patios.**

- **Backfilling all holes and trenches using gas powered compactor every six inches (6") to achieve between 90% to 95% compaction.**
- **Excavations at and below the building footings require additional compaction at trenches and excavations within 18" of a footing and all excavations need to be backfilled with slurry or lean concrete up to the bottom of the footing elevation. Compaction 95% with 6' lifts in areas covered by concrete or within patio and 90% in grass or planter areas away from the structures.**

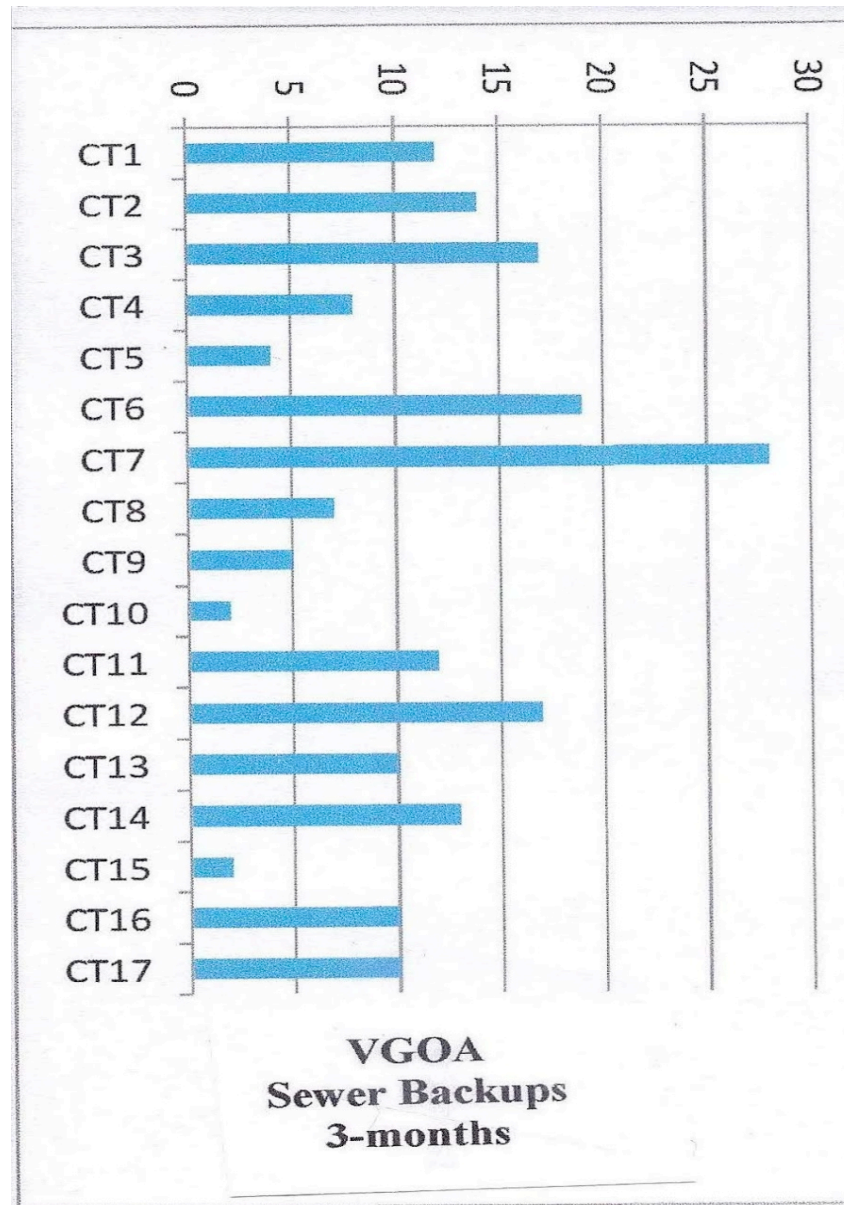
## Properly backfilled typical Lateral line.



**Improper backfilling will result in unstable soil conditions which will allow for sinking patios, fences, and perhaps buildings. It costs more to repair than to do properly the first time!**



**Sewer backups indicate the order in which sewers are replaced/repaired.**





# **Sewer Replacement Effects to Residents**

## **Camera Main Line Runs**

- 1. No effect on Owners usage of drainage.**
- 2. Patios must be accessible to contractor.**

## **Dig Laterals**

**No effect on Owners usage of drainage.**

**Patios must be accessible to contractor four days prior to lateral dig work.**

**Sections of patios will not be available for use because there will be a hole/trench in patio area.**

**Four days prior to lateral dig, personal items on patios that require relocation will be identified by management. Tags will be placed on these items.**

**If resident does not move personal items from affected areas, contractor will move them as necessary to perform work but will not be responsible for damages to items.**

**The hole/trench in patio areas will remain open for approximately two weeks. Holes will be covered with plywood. Owners may use patio areas with the understanding that they must avoid proximity of hole/trench areas. This is a dusty/dirty process.**

### **Pull and Connect Mains**

**Between the hours of 8 a.m. through 5 p.m., residents will not be able to use sinks, showers, tubs, toilets, dishwashers or any item which requires drainage.**

**Individual residents will be given two days notice prior to this work.**

**Toilets and sinks are available for use in Clubhouse.**

### **Inspection**

**No effect on Owners usage of drainage.**

**Patios must be accessible to contractor and inspector.**

### **Backfill**

**No effect on Owners usage of drainage.**

**Patios must be accessible to contractor.**

**Backfill process requires the use of gas powered machinery which will create noise and dust/dirt.**

# Patio Repair

Sewer Work



**Historically, patio repairs associated with sewer line work were minimal, and only made to the effected areas.**





**The work was done without proper techniques. Note the settling (sinking) of the paver in this photo.**



Additional example....





Also, no work was done to improve areas of the patios not effected by sewer work, although workers and material were there at the time to make efficient repairs.



# Patio Repairs 2011

- The Board approved an allowance to repair/restore all patios to as good, or better, condition than when the work began.
- The repairs will be made to trip and fall hazard areas first, followed by cosmetic repairs.



# 2011 Conditions

What we discovered.

During replacement we found approximately  $\frac{1}{2}$  of all VGOA 4" lateral lines clogged.



**During the 2011 repairs, varying degrees of root-damage/blockage/broken-pipes to approximately ½ of all Lateral connections (45) was discovered.**





**In some locations roots had completely blocked and/or destroyed elements of the sewer lines.**





30+ feet of the 6" main sewer line running between buildings 31 & 32 was completely gone.





**Upon excavation it was revealed that the sewer pipe between Buildings 31 & 32 had been overcome by tree roots.**

**You can see the tree root has actually absorbed the sewer line.**





## Changes to Scope of Work on this type of project are to be expected.

- Many elements of the system are not visible because they are located underground which prevents examination of conditions that interfere with trenchless installation of pipes.
- The process to effectively examine subterranean conditions prior to construction is costly.
- These potential subterranean conditions affecting the project were anticipated and a time & material clause to the betterment of the VGOA was included in the contract.

# End Managers Report

**Thank you for your patience and cooperation.**