



MECHANICAL, INC.
PLUMBING AND PIPING CONTRACTORS

SB COUNTY JAIL
ASSESMENT SURVEY
12/28/2007



MECHANICAL, INC.

PLUMBING AND PIPING CONTRACTORS

SB Jail investigation and assessment

November 1, 2007

Report: Overall the interior plumbing of the jail is in poor condition and in need of replacement. Almost all of the piping is currently installed per plan with all discrepancies noted on plans. Below you will find a report of our findings and any suggestions we might have for improving the system. In order to help in the description of the piping we assigned the sewer conditions at the different locations rating numbers on a scale from 1-10 with one being very poor and ten being new. Below we have noted the plan page next to each areas brief description for reference. Also within this report you will find detailed notes that correspond to the videos. The video's numbers correspond to the number before the note. The notes are in chronological order with the video.

Exterior piping problem areas: Condition of sewer yard piping from honor farm/laundry down to northwest is in very poor shape with a rating of 1. Pipe is flowing @ 75% capacity. 6" sewer is made up of SDR 35 and clay, with a large low spot approx 50' from manhole. Root intrusion in the area is bad and piping needs to be replaced. Another outside problem area that was noticed was at the IRC, approx 120' out from clean out pipe bellies stopping the flow for approx 20'.

*GENERAL

Pipe type-SDR-35, vitrified clay, and concrete manholes.

Grade-1%

Volume- peak was noticed at 75% to 90% at most exterior places.

A.O*LOADING DOCKS NORTHWEST

Approx 60' down from first manhole roots in pipe due to separation of 6" transite.

Overall piping in bad condition and in need of replacement

Volume-90%

MM rating for this section is a 1.

A.O*IRC

Condition of piping good rating of 7

Flow at peak only 50%

6" SDR has belly @ 120' out clear to manhole

P6*KITCHEN EXTERIOR SEWER YARD PIPING

Volume-50%

MM rating-1

Pipe has bad grade and is corroded, pipe is lined with grease and in some places cracked.

Lic. #774231

1027 Cindy Lane, Carpinteria, CA 93013

PHONE: (805) 745-1126 • FAX: (805) 745-1116

A.O*ADMINISTRATION BLDG

Piping in ok condition with a rating of 8

6" SDR 35

Flow at peak is 50%

The only bad spot is a belly approx 60' from irc clean out.

A.O*MAIN JAIL SOUTH ADMIN BLDG

Condition of pipe is ok with a rating of 7

During the week the pipe was noticed only to flow at 25%

6" SDR 35

A.O*MAIN JAIL KITCHEN

Condition of piping is very poor with a rating of 1

Flow rate of 25%

Piping is restricted down to half the diameter in many places due to build up of grease

Pipe appears to be 4" cast iron to manhole.

A.O*MAIN JAIL EAST, WEST, CENTRAL

Condition of pipe is not good with a rating of 4

Flow rate was noticed at times to be 100%

Pipe appears to be 6" clay hard to determine

A.O*NORTHWEST WING

Condition of piping is ok with a rating of 6

Flow rate at peak is 50%

6" SDR 35 is in good condition.

Pipe grade at 2%

A.O*LAUNDRY

Condition of pipe is poor with a rating of 3

6" SDR 35

Pipe is flowing at 100% capacity

*MANHOLES: After inspecting all of the manholes we came to the conclusion that severe deterioration has occurred in each manhole. We recommend manholes should be rebuilt, from the bottoms up, the bases appear to be in fair condition. After rebuild they should be epoxy sealed. The existing manholes are currently built of mostly brick.

INTERIOR PIPING

PROBLEM AREAS- Overall the interior piping is in bad condition. Problem areas that were noticed and in need of immediate replacement were as follows: kitchen, main jail admin bldg, basement by the tool corral floor drains.

P2.1*IRC

Condition of piping is ok with a rating of 5

Flow rate was noticed at 50%

All piping was cast iron

Some problem areas were noticed see drawing for notes

P4 & P2*MAIN JAIL ADMIN 1ST AND 2ND FLOOR SOUTH

Condition of piping is very poor with a rating of 1 in need of replacement

Flow rate 25%

All piping was cast iron that has been severely damaged, with large cracks and pits.

Piping in need of repair

P4(A)*MAIN JAIL BASEMENT

Condition of piping is poor with a rating of 2

Flow rate was noticed at 25%

All piping is showing signs of wear, interior walls are very rough

Pipe sizes range from 2-4" see plans

P6(A)*KITCHEN INTERIOR PIPING

Condition of piping was very poor with a rating of 1

Flow rate was 100%

All piping is cast iron and full of grease, that has hardened to the walls.

Pipe is cracked 2' from floor clean out

All piping is in need of replacement.

Piping can not be repaired in sections due to the bad condition.

P6(D)*MAIN JAIL SOUTH SIDE FEMALE

Condition of pipe is ok with a rating of 4

Flow rate 50%

All piping is cast iron ranging from 2 to 4"

P5(C) & P7(B)*MAIN JAIL EAST WING

Condition of pipe is ok with a rating of 4

Flow rate at peak was noticed at 100%

All pipe is cast iron ranging from 2 to 6"

Problem areas noted on plans

P5(A) & P7(A)*MAIN JAIL WEST WING

Condition of pipe is ok with a rating of 4

Flow rate is 75%

All pipe is cast iron ranging from 2 to 4"

P2*MAIN JAIL NORHTWEST WING

Condition of piping is good with a rating of 6

Flow rate is 75%

All piping was cast iron 2 to 4"

P5(B) *CENTRAL

No video access, visual inspection, see plans for any notes.

CONCLUSION: In conclusion the overall waste piping of the jail is in need of attention, it is our opinion that the life span is coming to an end and that sometime in the near future the facility will begin to experience problems with no easy fix. Total replacement of the interior piping is recommended. The outside piping bad spots can be repaired in sections except for the transite. Even the vents have severe corrosion.

P7 *MAIN JAIL DOMESTIC WATER- MM used a compression test to test the strength of the piping. The cold water system is in ok condition, its worn but has some life left in it. The hot water piping however is in poor condition, failing the test. The piping is brittle and at the end of its life. It is suspected that the original recirc pumps in the IRC were oversized causing the copper to fail. In speaking with the facilities manager he stated that a lot of the fittings have already failed. The plan has the dates that most of the original piping was installed. Main jail-1963, northwest addition 1985, IRC 1989. The hot water piping has lost its elasticity and is becoming brittle.

PIPE RATINGS

Cold-5

Hot- 3

Hot return-2

Tempered-3

VIDEO NOTES

(number before note corresponds to video numbers)

V1-Irc clean out in front of entry rating #1 belly in 6" sdr 120' from man hole as shown in plans

V1-Irc clean out in the rear rating of 2, hard to determine has a large flow always

V1-irc 1st and 2nd floor rating of pipe 4

V1 & V4-H1 pipe rating is a 2

V4-room 414 rating 2

V4-main jail parking lot 6" sewer rating 7

V4-kitchen parking lot co rating 4

V4-kitchen parking lot manhole rating 5

V4-female classroom rating #1 needs to be replaced

V4-c-6 rating 3

V4-male basement rating 3

V5-w-13 hard to rate to much hot water flow appears to be ok

V5-outside storm drain co by transportation buses rating 7

V5-manhole below honor farm at top of driveway 1/8 bend has bad transition and lots of roots. Must be replaced 162'

V5-west medical room rating 1 there is a belly in pipe 16' from c/o.

V5-RM 38 admin bldg sewer is abandoned needs to be concreted

V5-main jail public bathroom sewer pipe rating 1

V5-cell #2 chase rating sewer pipe 2

V5-WI #29 cracked pipe on top of cast iron rating 1

V6-WI #21 lots of (rat lines) rating 1

V6-female dress out south side rating 2

V6-female south side cell # 140 rating 3

V6-female south side cell #156 sewer rating 3
V6-7-12 k section rating 3
V6-bathroom cell #137 lots of rat lines, rating 3
V6-c1 rating 2
V6-kitchen main sewer pipe rating 1 needs replacement roots and grease
V6-w16 shower could not get through p-traps
V6-w11 crack in pipe 4' from co rating 1
V6-northwest condensate drain tied to sewer with no air gap-10' in. rating 3
V6-cell chase #16 24' in pipe bellies. Rating 1 needs to be repaired
V6-N200 sewer pipe rating 3
V6-basement tool area floor drains rating is 1. the 2" sewer drains are closed up and need to be replaced.
V6-co outside of welding shop rating 5
V6-shipping and receiving dock c/o rating 5
V6-c4 belly in pipe approx 25' in from c/o pipe rating 1 needs replacement

Video 2 contains different spots in the kitchen and main jail. See video, piping is in bad condition. No real problem areas noted, just a lot of build up. Over all rating for all piping on this tape is a 2

Video 3 irc chase 418 rating 2 1st and 2nd floor, again no real problem areas, just old deteriorating piping.