

October 31, 2017

Ruji Ding
City of Mercer Island
9611 SE 36th Street
Mercer Island, WA 98040

RE Existing Side Sewers and Easements at 8000 SE 20th Street, Mercer Island

Dear Ms. Ding:

BACKGROUND:

The property now known as 8000 20th St SE has two unresolved easements to the City, related to side sewers across it. This letter summarizes our findings and recommendations based on investigations and observations on-site while King Construction excavated for and videotaped side sewers on the site.

This review covers findings for both 8000 (KC Parcel # 5452302218) and 7840 (KC Parcel #5452302216) SE 20th St. These parcels are under review for a lot consolidation, eventually making them one parcel.

City of Mercer Island records indicate that currently, the parcels are served by a shared side sewer that runs from the existing house on the 7840 parcel across the north lawn of the 8000 house, and connects to the City sanitary pump station just east of the east parcel line of the 8000 parcel. The 8000 house connects to this side sewer as it runs in front of the house. There is also an un-shared side sewer from the south side of the 8000 house that connects to the City's 8-inch main in the adjacent (east) property.

City and county records also indicate that this shared private side sewer has a 10-foot wide easement over it. Two other easements are recorded against the 8000 property, for the benefit of the City of Mercer Island, that don't appear to be related to either these side sewers or the public main that follows the lake shore line. The surveyor was unable to define these easements on the ground after review of the recording documents.

INVESTIGATIONS:

The sewer investigation consisted of video inspecting the existing side sewers from the houses to the City main, and making two exploratory excavations from the 8000 house toward the lake. The videos were made with the idea of finding unknown connecting pipes to the known side sewers.

Video:

Four sewer videos were made:

1. From a clean-out between the houses, back up to the 7840 house,
2. From the clean-out, downstream to the city sewer main/pump station.
3. From the 8000 house, a video was made down the side sewer that exits the north side of the house, and joins the shared sewer.
4. From the un-shared sewer off the south side to the City main.

None of these videos show any evidence of another side sewer that could serve any other of the surrounding properties. The videos do show that the existing site side sewers, if they were to remain in operation, should be cleaned and jetted but, as they will soon be demolished for new construction, this is not needed. No evidence of an existing backflow valve was found in this existing line.

Due to the condition of the existing side sewer, it is unclear what part of the city system this side sewer connects to. Some city records indicate the side sewer connects to the City's 8-inch pipe, others indicate that

the side sewer connects directly to the City's pump vault, in the wet well. This condition will be verified in construction and the new side sewer reconnected where the existing side sewer connects.

Other existing neighboring properties that might rely on this shared sewer:

1. To the west of the 7840 parcel is 7838, according to City records it connects to the public lake line sewer near the property line between 7838 and 7840.
2. The 7850 parcel (off the southwest corner of the subject site) has city records showing it connecting to the city's public main south of the parcel in SE 20th Street.

Excavations:

One exploratory trench excavation was made from the north side of 8000 out to about 75-feet from the north face of the house off the west corner of the house, did not encounter any other utilities, except private irrigation and control conduit. Once below the topsoil and irrigation piping, the excavation appeared to be going through previously undisturbed soils. This excavation was made to a depth of between 3.5 and 4-feet.

A second excavation was made about 20-feet west of the pump station, between the known side sewer and the public force main. The trenching was done carefully to not disturb any of the known utilities in this area. This trench was dug to a depth of between 4 and 4.5-feet deep. No underground utilities except for private irrigation, near the surface, were found. The soils, below the surface, appeared to never have been disturbed before.

Record Drawing Review:

A review of records and as-built drawings from the 1955 installation of the pump station indicate 3 gravity sewers entering this City Pump Facility:

- A City main from the south (20th Street) Under the east property line of the 8000 parcel.
- A city main from the east (under the north lawn of 8004 20th Ave)
- The shared side sewer from 7840 and 8000 properties (from the west).

Per this drawing all the known gravity pipes enter the pump within 5-feet of the surface. Only one of them (the private side sewer) from the west. It is the shallowest of the three.

Three pipes exit this facility:

- The public force main-to the northwest, located about 3-feet deep.
- A gravity overflow; west and then north (this pipe may be connected to the existing storm drain that runs past the west side of the pump vault)
- A suction intake; to the north

The force main has been found about 3-feet below grade to the Northwest of the vault. It continues west around the shoreline to the west property line of 7840 parcel.

The vault overflow appears to exit next to the private side sewer, out the west side of the pump vault. At about the same depth (3-feet below grade), and runs to the lake by gravity. This pipe may connect to the existing storm drain pipe that runs from 20th Avenue to the lake.

The suction intake is supposed to be deep, under lake level, beneath the neighbor's dock. Based on the actual installed location of the vault (east of the property line), this pipe should be all on the neighboring property.

The Surveyor found the water level in the wet well side of this facility to be about 5.6-feet below the lid, which aligns with the inverts of the two City mains indicated in the 1955 record drawing. This is typically a constant level of water kept in the vault, so that the pumps don't run dry, or the system need re-priming. It is never pumped below this level except for maintenance.

A gravity flow pipe could not enter the vault any deeper than the static level of the wet well, and still run reliably. If the wet well static water depth is about 5.6-feet below the lid of the vault, then that is the maximum depth for the invert of a gravity inflow pipe.

CONCLUSION:

In conclusion, we find no reason for the City to have any easements in the north portion of this property beyond the easement associated with the public sanitary sewer force main that follows the shore line. The two undefined easements appear to be duplicates, or for infrastructure that was never installed, or installed in different locations. The defined private easement for the side-sewer shared by the 7840 and 8000 parcels will be rendered needless when the shared side sewer is removed, and the two parcels joined into a single property.

In our opinion, there is no existing city sewer infrastructure within these easement areas. The adjacent properties that might have side sewers that connect through this property have documented connections to City mains that do not need easements to run through either the 8000 or the 7840 parcels.

See the attached figures and photographs for our basis of these findings and conclusions.

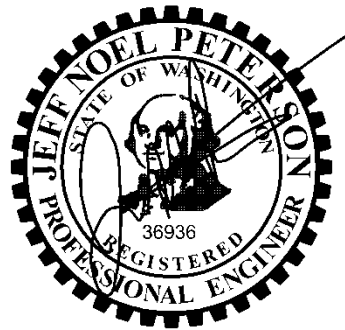
Sincerely,

COUGHLIN PORTER LUNDEEN, INC.



Kenneth A. Wiersema P.E.

Civil Project Manager



ADABLE", ON PL (08/19/2015)

3/4" LED
PIPE OF
1.84'

"B&H
23' PL

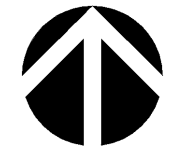
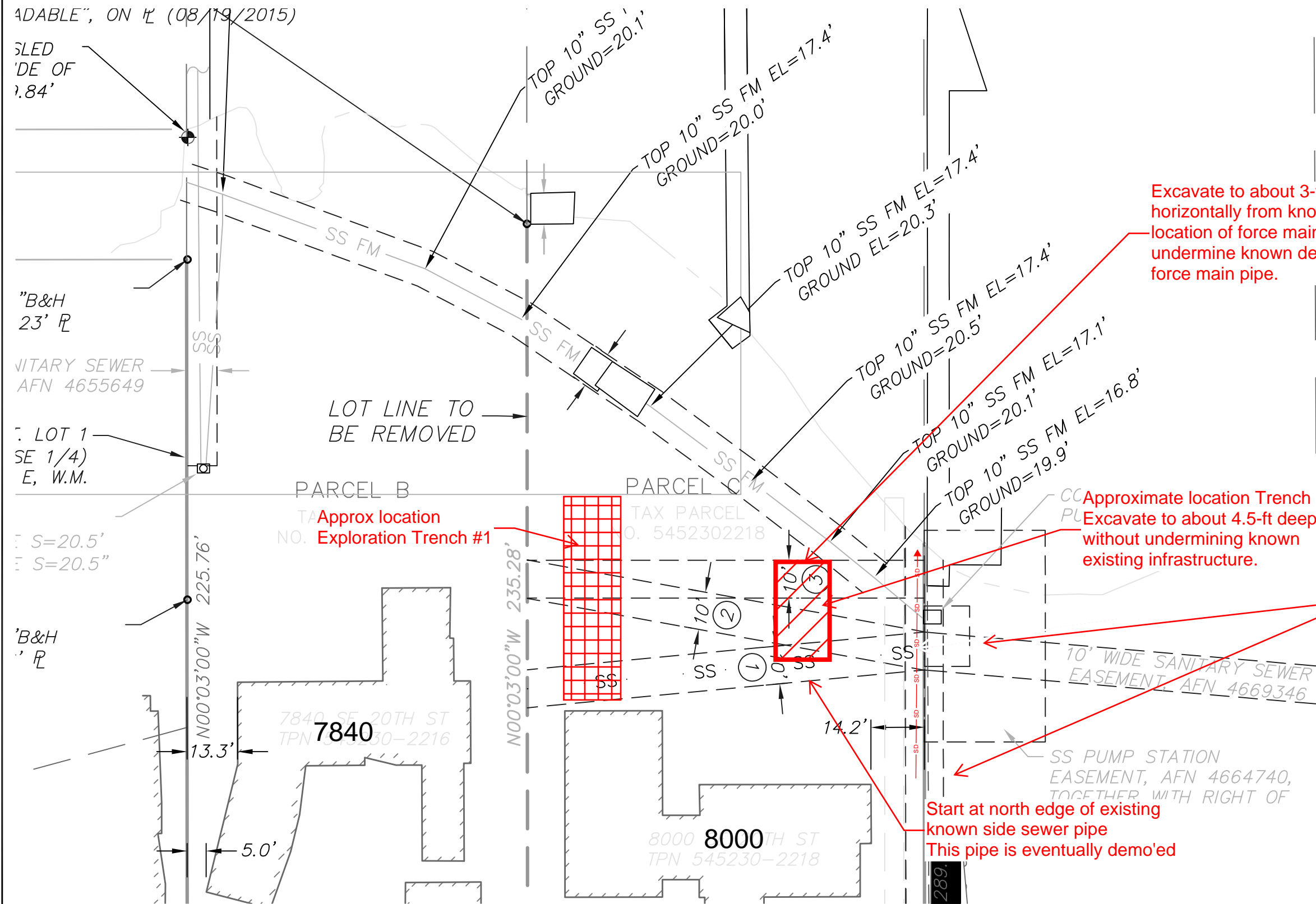
SANITARY SEWER
EASEMENT AFN 4655649

LOT 1
(SE 1/4)
E, W.M.

S=20.5'
S=20.5"

"B&H
' PL

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Not to a scale

Excavate to about 3-feet horizontally from known location of force main, Do not undermine known depth of force main pipe.

Approximate location Trench #2
Excavate to about 4.5-ft deep without undermining known existing infrastructure.

Note that survey has the existing City sewer main and pump station on property to the east of this project

Start at north edge of existing known side sewer pipe
This pipe is eventually demo'ed

Excavation Locations

Project: NFH 8000 SE 20th St

Designed By: KAW

Date: 10/31/2017

Project No: C16

Client: Conard Romano

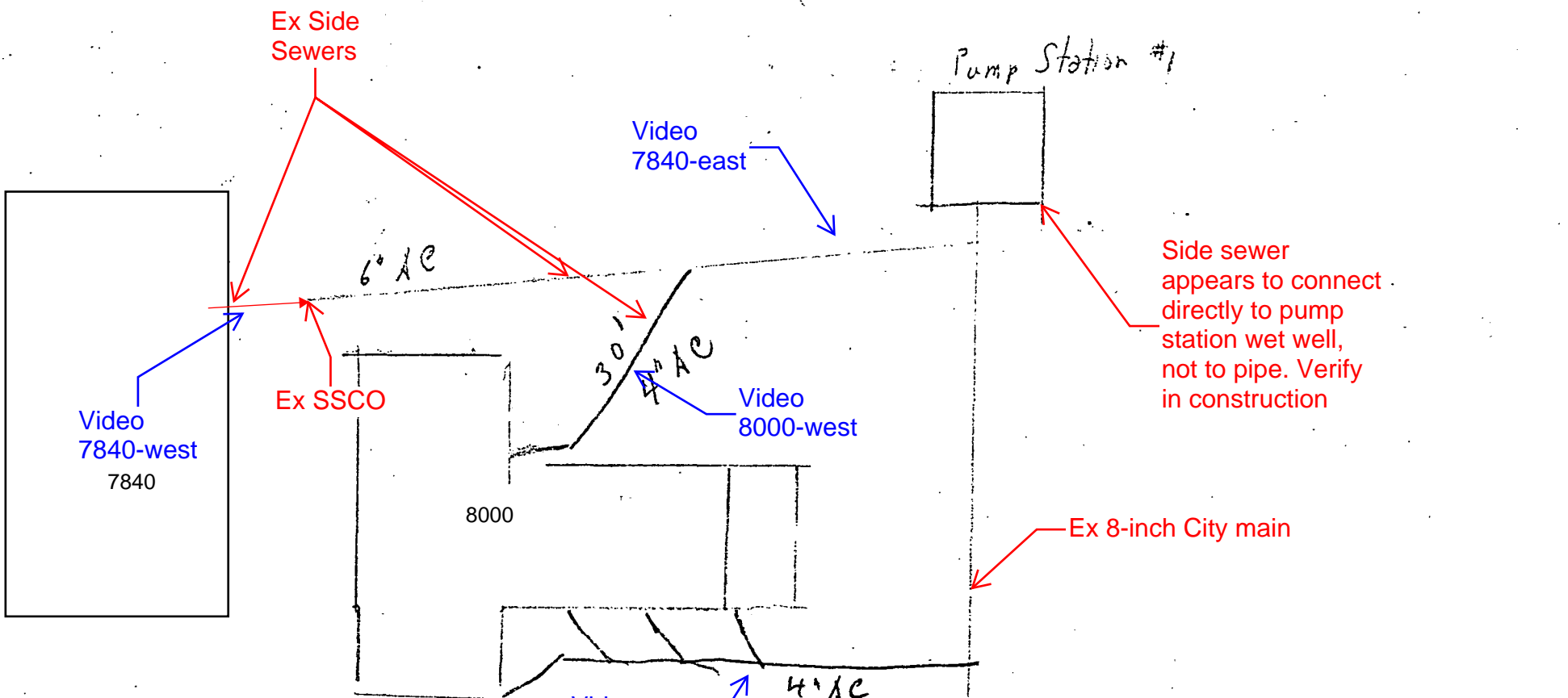
Checked By:

Sheet:

8000 - SE 20th ST.

Owner H. W. Matthews George Dr Address 80th & 22 Contractor Mercer Island Sales

Date Permit Issued Aug 10 57 Date Job Completed & Accepted July 20 - 1957 By B. S. Brown



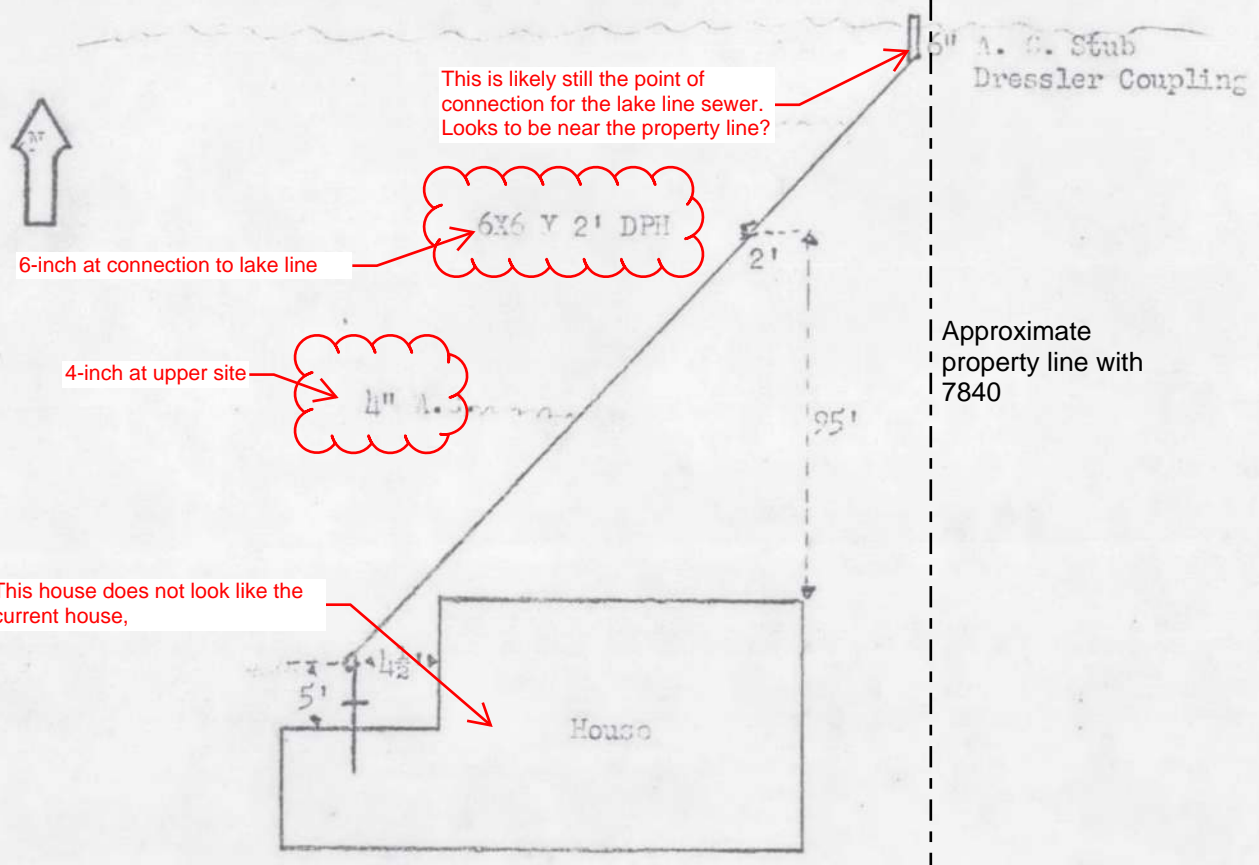
Side sewer appears to connect directly to pump station wet well, not to pipe. Verify in construction

1. Commercial or Domestic _____
2. Dist. from property line to sewer main _____
3. Dist. from house bldg. line to property line _____
4. Min. grade from main to property line _____ From property line _____
5. Dist. of M. H. No. _____ to Wye _____
6. Depth of sewer main to wye _____
7. Basement _____ Basement connection _____
8. Depth of pipe at house connection _____
9. Type of pipe _____ Size of pipe _____
10. Remarks _____

COMMERCIAL ONLY

1. Name _____
2. Type _____
3. Frontage _____
4. No. of Floors _____
5. Remarks _____

Owner William Lovell Address 7838 S. E. 22nd Place Contractor D & D
 Date Permit Issued 11/2/71 Date Job Completed and Accepted 11/3/71 By Olsen



This is likely still the point of connection for the lake line sewer. Looks to be near the property line?

11/2/71

6x6 V 2' DPH

6-inch at connection to lake line

4-inch A.C. Stub

4-inch at upper site

This house does not look like the current house,

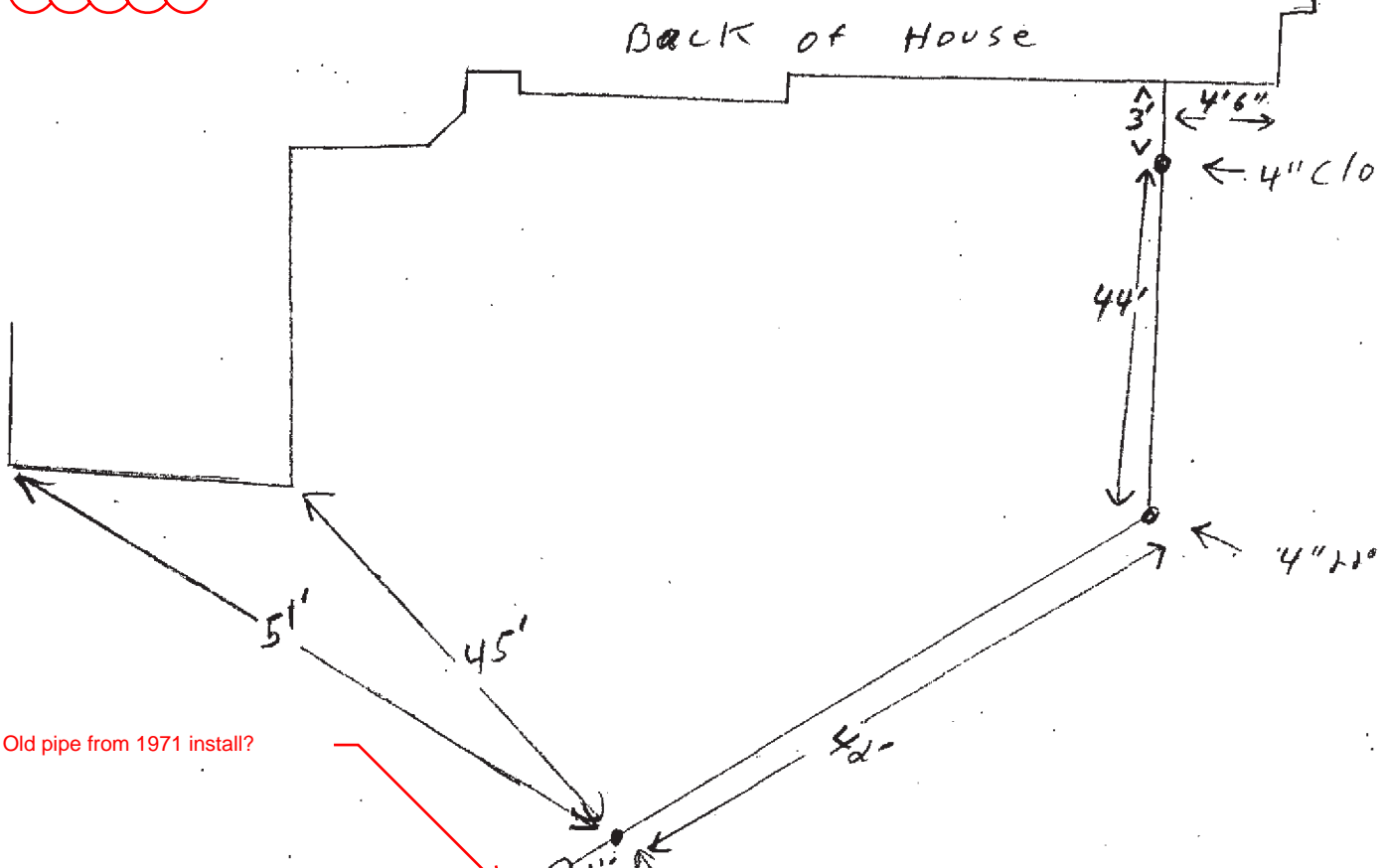
Approximate property line with 7840

COMMERCIAL ONLY

1. Commercial or Domestic _____ Joint _____
2. Dist. from property line to sewer main _____
3. Dist. from house bldg. line to property line _____
4. Min. grade from main to property line _____ From property line _____
5. Dist. of M. H. No. _____ to Wye _____
6. Depth of sewer main to wye _____
7. Basement _____ Basement connection _____
8. Depth of pipe at house connection _____
9. Type of pipe A.C. Size of pipe 1 1/2 & 6"
10. Remarks _____

1. Name _____
2. Type _____
3. Frontage _____
4. No. of Floors _____
5. Remarks _____

Owner Steve Address 7838 SE. 2ND PL. Contractor Bolles Const
Date Permit Issued 12/3/99 Date Job Completed and Accepted 2/3/00 By S. Vane



Old pipe from 1971 install?

Original install shows 6-inch further down the pipe

- 1. Type of Pipe PVC Size 4"
- 2. New manhole number nearest downstream manhole
- 3. Old manhole number nearest downstream manhole Lake line
- 4. Hep Number A-3 Number of dwelling units 1
- 5. Remarks

*4" FST
FEE
Replaced
w/ Backflow
after test*

COMMERCIAL ONLY

- 1. Name
- 2. Type
- 3. Frontage
- 4. No. of Floors
- 5. Remarks

Lake Washington

MERCER ISLAND SEWER DISTRICT

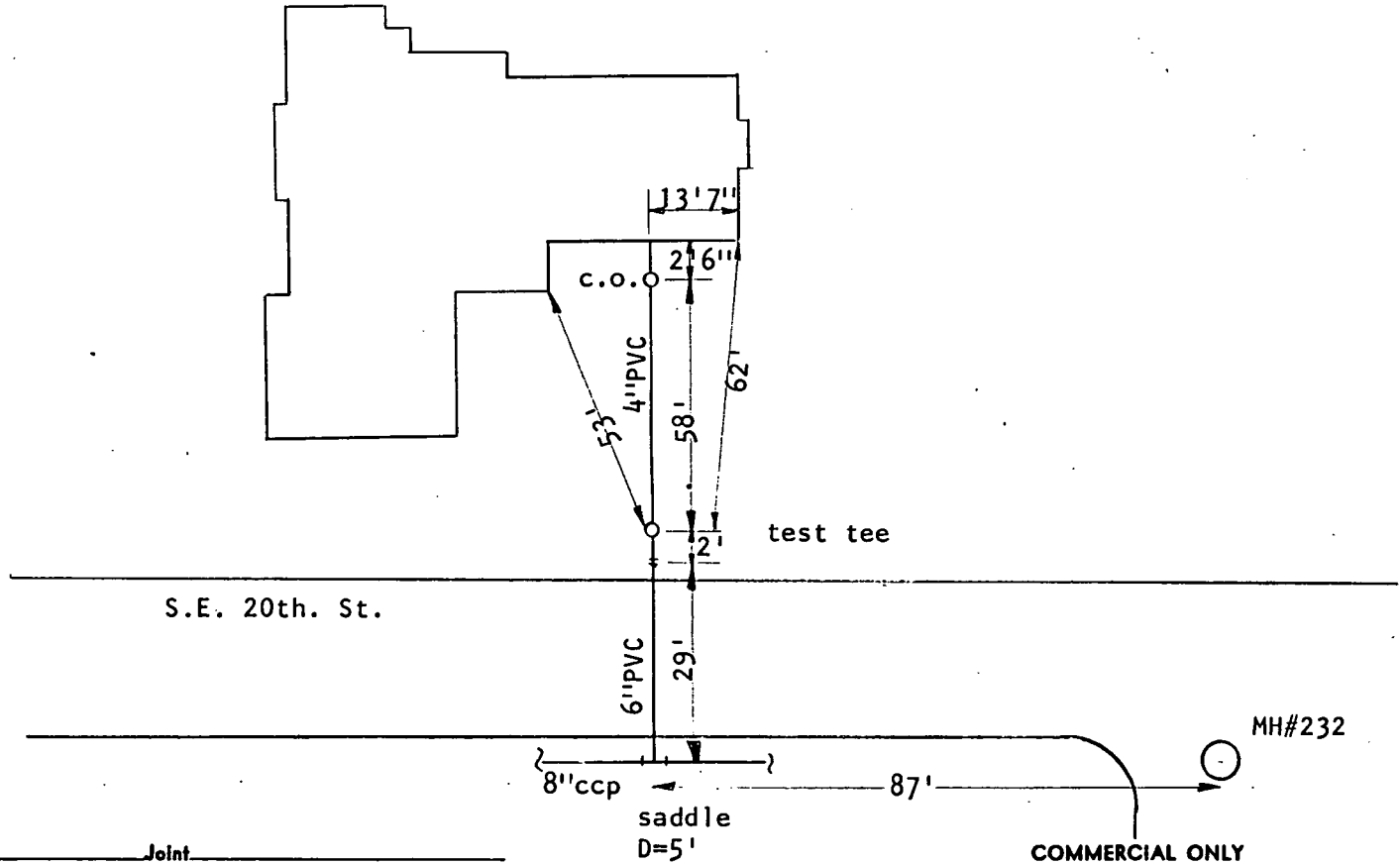
SIDE SEWER PLAT

004-080710

PERMIT No. #6997

Owner RKK Construction Address 7850 S.E. 20th. St. Contractor Bolles
 Date Permit Issued 9-18-85 Date Job Completed and Accepted 9-24-85 By Doll

Lamson Short Plat
 Lot A



1. Commercial or Domestic _____ Joint _____
2. Dist. from property line to sewer main _____
3. Dist. from house bldg. line to property line _____
4. Min. grade from main to property line _____ From property line _____
5. Dist. of M. H. No. _____ to Wye _____
6. Depth of sewer main to wye _____
7. Basement _____ Basement connection _____
8. Depth of pipe at house connection _____
9. Type of pipe PVC Size of pipe 4" & 6" dia.
10. Remarks _____

1. Name _____
2. Type _____
3. Frontage _____
4. No. of Floors _____
5. Remarks _____

PERMIT No. #6997



Looking North



Looking South

Irrigation piping

~3.5 ft



7840 house

8000 house

Approximate alignment
of existing shared side
sewer

North →



Stakes on Force Main

City Pump Station



Private side sewer for 8000 & 7840

Private Irrigation Piping

Excavation to 4+ feet deep. This is below lake level and was starting to fill with lake water.

Private Irrigation Piping

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Private side sewer for
8000 & 7840

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Piping

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