

Leisure Villas Sewer Laterals Contents

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December 17, 2015

Re: Combined Sewer Laterals

To whom it may concern,

Dennis Schoonover with Schoonover Plumbing and Heating asked me if I could give him my opinion regarding Sewer laterals for multiple senior living homes. He explained to me that there are four homes all connected together under one roof or building and that in 9 previous senior living communities that his company has done, there has been only one sewer lateral per four units or building. He explained to me that his company installs the main building drain all the way through the building and installs a cleanout at both ends of the building. This gives great access for drain cleaning equipment if there is ever a problem, and without having to enter someone's home with cleaning equipment.


He then told me that Herriman City wants four individual sewer laterals per building, one for each home vs. one lateral per building. He explained his concern with having multiple sewer laterals vs. just one. He explained that each home will have a drainage fixture unit load of 19 DFU to 23 DFU (drainage fixture units) and that the homes usually only have one to two occupants and that some of the residents only occupy the homes seasonally, and with such little or no use of the unit there would be a great potential for blockage in the individual sewer lateral because of such low flows. He feels that having all four units connect to a common lateral would provide higher discharge flow rates and less potential for a blockage.

He is absolutely correct in his theory. I feel that one lateral would better serve the four-plex buildings he described. There are two reasons for my concern. First, since today's toilets are designed with low flow volumes, 1.28 gpm to 1.6 gpm, they don't have enough water to properly carry the solids to the sewer main. Second, the occupancy is low in senior living homes, therefore the frequency of plumbing fixture use is reduced, further increasing the potential for a blockage. If all four units were tied into one common sewer lateral the flow rate would increase due to more occupants using the system. I recommend using one lateral per building (4 homes) and I would design it that way. There will be considerably fewer problems associated with a combined lateral.

Sincerely,



JTB HVAC & Plumbing Engineering, Inc.

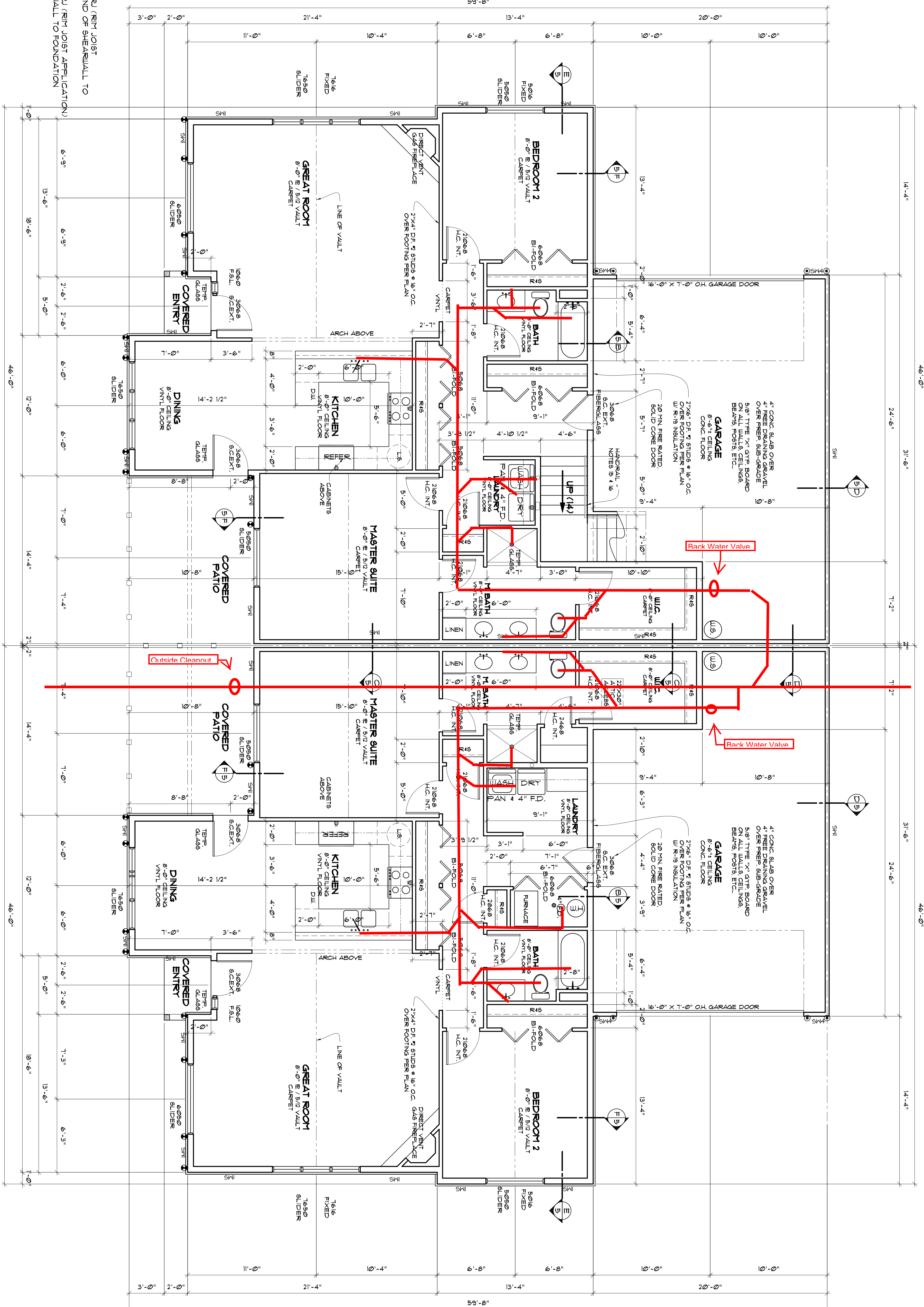


Jeff T. Brown, P.E.
Principal
(801)707-5011



EXAMPLE

MARK	MATERIAL	NOTING	ALLOWABLE SHEAR (KIP/FT)
SM1	1/6" STRUCTURAL II PLYWOOD OR OSB	8d @ 6" O.C. EDGE	260
SM2	1/6" STRUCTURAL II PLYWOOD OR OSB	8d @ 4" O.C. EDGE	350
SM3	1/6" STRUCTURAL II PLYWOOD OR OSB	8d @ 2" O.C. FIELD	430
SM4	1/6" STRUCTURAL II PLYWOOD OR OSB	8d @ 3" O.C. EDGE	430
		8d @ 12" O.C. FIELD	640



BRISTOL COURT W/ BONUS FLOOR PLAN

BRISTOL COURT FLOOR PLAN

SCALE: 1/4" = 1'-0"

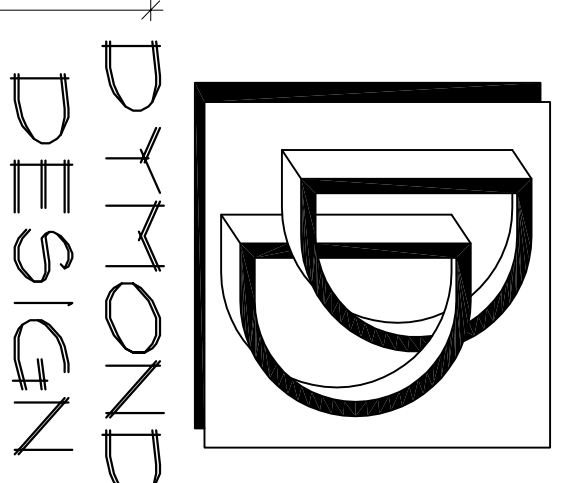
SCALE: 1/4" = 1'-0"

1602 SQUARE FEET @ LIVING
565 SQUARE FEET @ GARAGE

1602 SQUARE FEET @ LIVING
565 SQUARE FEET @ GARAGE

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A NEW HOME FOR LEISURE VILLAS LOCATED AT SUNSET VILLAS STRACUSE, UTAH

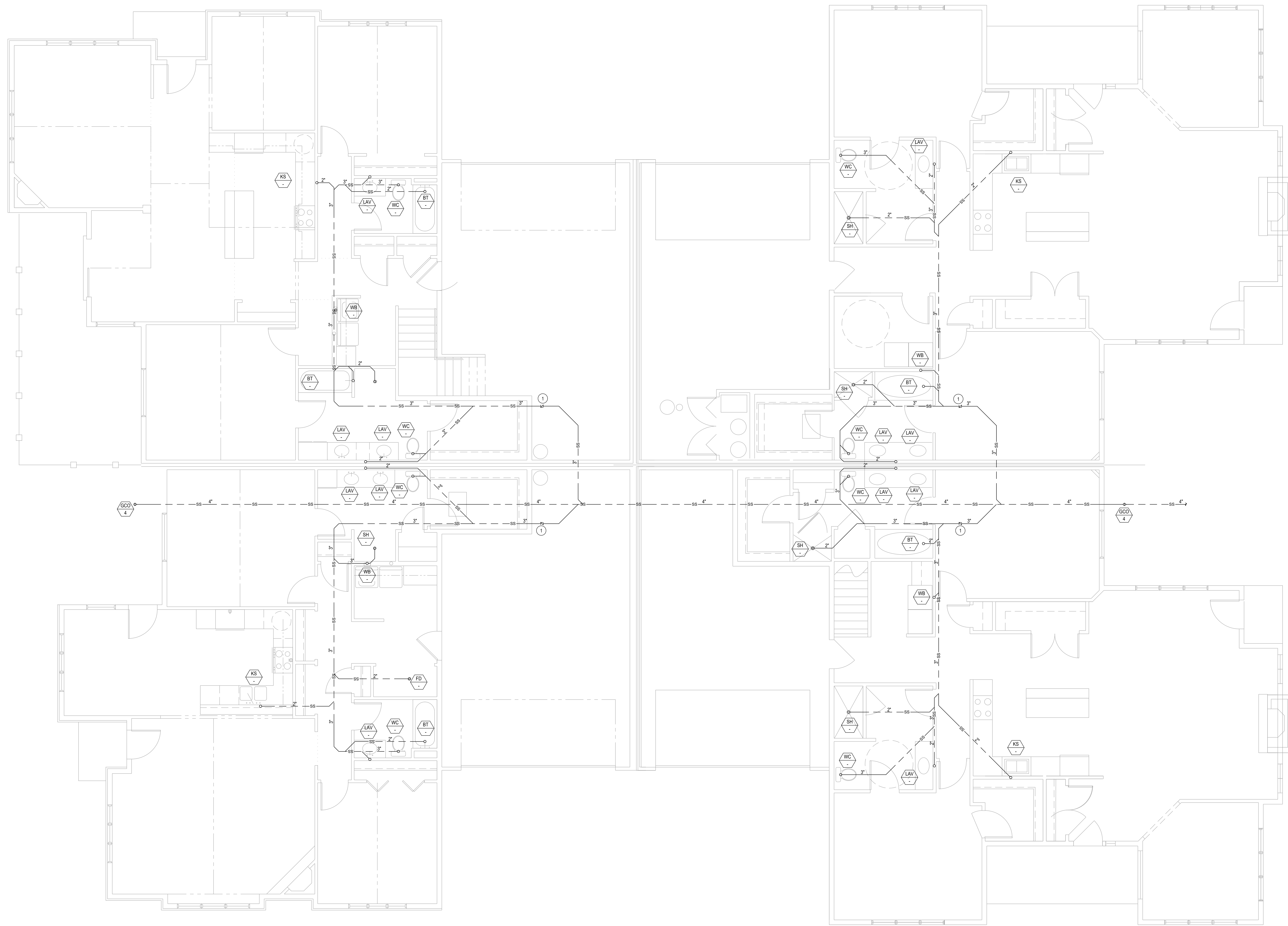


NOTE:
IT IS THE SOLE RESPONSIBILITY OF THE GENERAL CONTRACTOR & ALL SUB-CONTRACTORS TO THOROUGHLY REVIEW THESE PLANS FOR DIMENSIONS & SIZES PRIOR TO ANY CONSTRUCTION OR CONCRETE POURING. PLEASE CONSULT WITH THE DESIGNER FOR ANY QUESTIONS REGARDING THE PLANS. DIMENSIONS TAKE PRECEDENCE OVER SCALE.

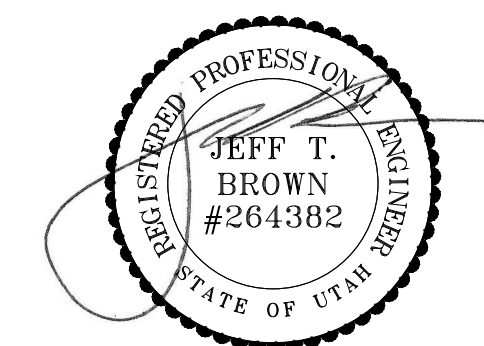
- FILE NO. 143-3 BRISTOL COURT
- DRAWN BY: B.D.
- CHECKED BY: B.D.
- ORIGINAL DATE: 09/26/13
- REVISION 1:
- REVISION 2:
- REVISION 3:

KEYED NOTES

- 1 3" BACKWATER VALVE

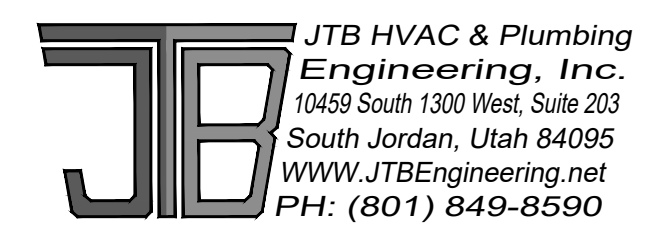


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PERMIT SET

REV.	DATE	DESCRIPTION
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A	03/08/2018	RELEASED FOR REVIEW



PROJECT NAME:
LIESURE VILLAS CONDOS
 ADDRESS:
 -

DRAWING TITLE:
UNDERGROUND PLUMBING PLAN

JOB NO:	18.062	SHEET NUMBER
DATE:	03/08/2018	P201
DRAWN BY:	JTB	
SCALE:	1/4"=1'-0"	

IPC- 701.3 states:

A building having plumbing fixtures installed and intended for human habitation, occupancy or use on premises abutting on a street, alley or easement in which there is a public sewer shall have a separate connection with the sewer. Where located on the same lot, multiple buildings shall not be prohibited from connecting to a common building sewer that connects to the public sewer.

1. The true intent of the IPC regarding this issue:

In the general comments of IPC- Chapter 7, it states: “The probability method of sizing drainage systems was developed largely by Dr. Roy Hunter. Through his research, Dr. Hunter attempted to standardize and simplify design principles, while reducing the cost of plumbing systems.”

It goes on to state “The purpose of Chapter 7 is to regulate the materials, design and installation of sanitary drainage piping systems as well as the connections made to the system. The intent is to design and install sanitary drainage systems that will function reliably, are neither undersized nor oversized and are constructed from materials, fittings and connections whose quality is regulated by this section.”

In the commentary for IPC- 701.3, it states: “This requirement intends to prohibit the combining of sewers serving different buildings prior to connection to the public sewer. The only exception is where the sewers to be combined are serving buildings on the same lot or parcel of land. This section does not prohibit the use of adjoining properties that have been included in a dedicated easement approved by the administrative authority.”

The intent of IPC- 701.3 depicts that the only reason for having separate sewer connections is so that there is clarity among the individual property owners, as to who is responsible for maintaining the sewer lines. Since the declaration to be recorded for this subdivision clearly states that the HOA is the responsible party, regardless of who or how a line got blocked or otherwise damaged, there is no reason to forbid this extension of the sewer line into the building.

We are not attempting to combine sewers of different buildings prior to a connection to the public sewer. We are attempting to connect adjoining units of the same building to a single sewer connection.

The commentary also states that: “The common building sewer is actually an extension of the public sewer and is under control of the public authority.” and that “When the sanitary discharge from more than one building is connected to the public sewer by means of a shared or common sewer line, the responsibility for the maintenance of the common sewer line can become a problem. Should a stoppage develop in the common portion of the drain, all parties connected to the drain could disclaim responsibility for having the stoppage cleared. This presents a problem because there is no one party to hold responsible for the maintenance of the drain. Also, replacement or repairs of a sewer are the responsibility of all parties sharing a common drain connection, and the process of determining the point of origin of the wastes into the common drain is more difficult.”

This argument does not apply in our situation. No single homeowner within this building will be deemed responsible for the maintenance of the common sewer line, because this subdivision has recorded a legally binding declaration with the plat that clearly states in the following sections:

Also, no single homeowner within this building will be deemed responsible for the maintenance of the common sewer line, because this subdivision has recorded a legally binding declaration with the plat that clearly states the following:

2.4.1.1 common area utility maintenance obligations:

“The Common Area and all Improvements thereon, including, without limitation, all utility lines servicing one or more Residences, whether public or private company owned, located on, over or under any Common Area. The Association shall forever repair, replace and maintain the utilities that constitute part of the Common Area, whether public or private company owned or whether separately metered, located on the Common Area.”

2.4.1.2 the exterior elements (including utilities) maintenance obligations

“The exterior elements of the Residences, including, without limitation, all utility lines servicing one or more Residences, whether public or private company owned, located on, over or under any Lot, up to the point where the utility line penetrates the exterior wall, concrete floor slab or ceiling of the Residence. The Association shall forever repair, replace and maintain the utilities that constitute exterior elements of the Residence, whether public or private company owned or whether separately metered, located on the Lots and which end at the connecting point to the exterior of the Residence where such utilities enter the Residence and are stubbed to provide utility service to the Residence but do not include any interior portion of such utilities located within a Residence which constitute interior elements as further defined in Section 1.36.1 above.”

8.1.4.4 provides means to set aside funds to pay for maintenance

“set aside reserves for future maintenance, repairs, and replacements of all areas and Improvements that the Association is obligated to maintain as required by this Declaration, including without limitation reserves for the maintenance and repair of the Party Walls and utility and other service lines, whether public or private-company owned, constituting exterior elements as further described in Section 1.36.2 above, or constituting a part of the Common Area;”

Thus we see that the intent of this code, in conjunction with the subdivision’s legally binding declaration, does not prohibit us from running a common sewer to service this single building.

2. The provisions of this code do not fully apply:

As shown in the commentary of IPC 701.3 (see figure 1 below), This code is referencing multiple buildings on multiple lots. We are not multiple buildings on multiple lots. We are a single building, engineered with sheer walls that are intended to help support adjoining units.

Also, as shown in the commentary of IPC 701.3 (see figure 2 below) we are not multiple buildings on a single lot and under a single ownership. This this diagram does not apply either.

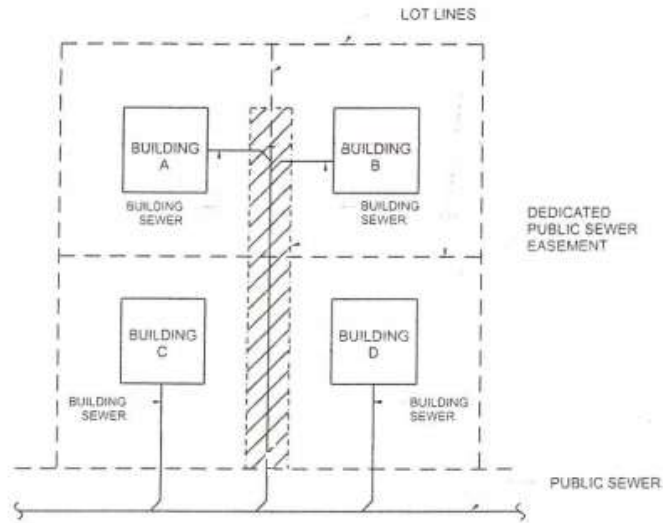


Figure 701.3(1)
COMMON BUILDING SEWER LOCATED WITHIN AN APPROVED PUBLIC SEWER EASEMENT

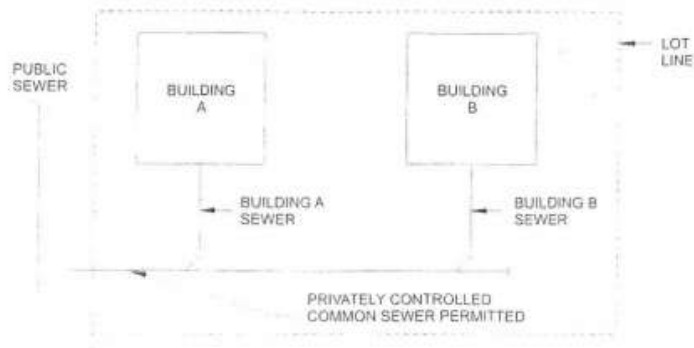


Figure 701.3(2)
BUILDING ON SAME LOT

Figure 3 (below) is not in any diagram referenced to the IPC 701.3 It is layout for which we are approved to build. It is depicting a legal subdivision with a single building on multiple lots, located on top of a common parcel of land.

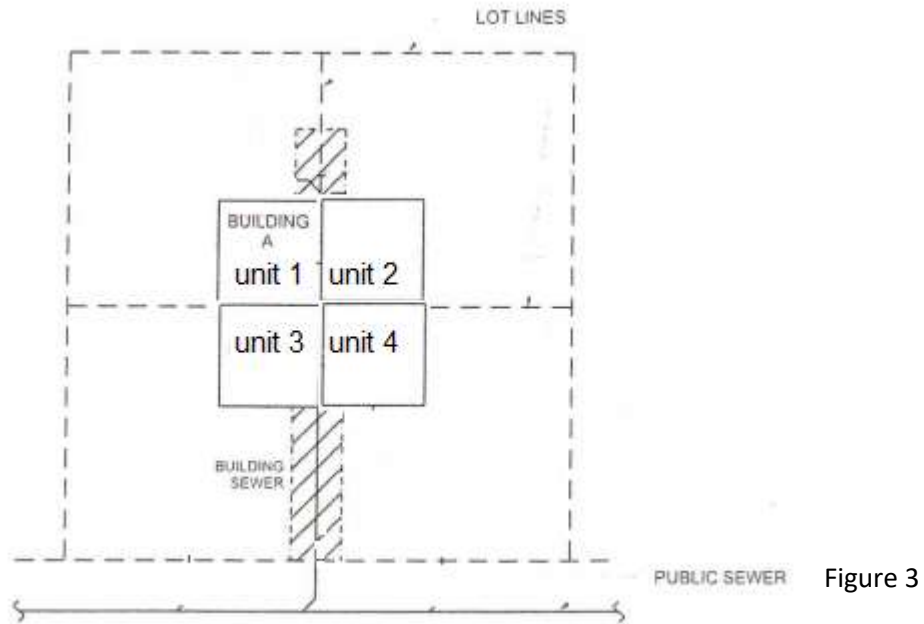


Figure 3

As will be noted on the engineered diagram, the common sewer lateral will still be a public sewer lateral, with each home having a separate connection to it. The only difference is, that the recorded declaration, as stated in argument number 1, will be fully maintained by the HOA and not the city of Saratoga Springs or any one individual member.

3. Provide an engineered solution of an equally good or better form of construction

If we were to design this subdivision with the recommendations that we install a separate lateral for each building, then our buildings would more resemble something like figure 4 (below).

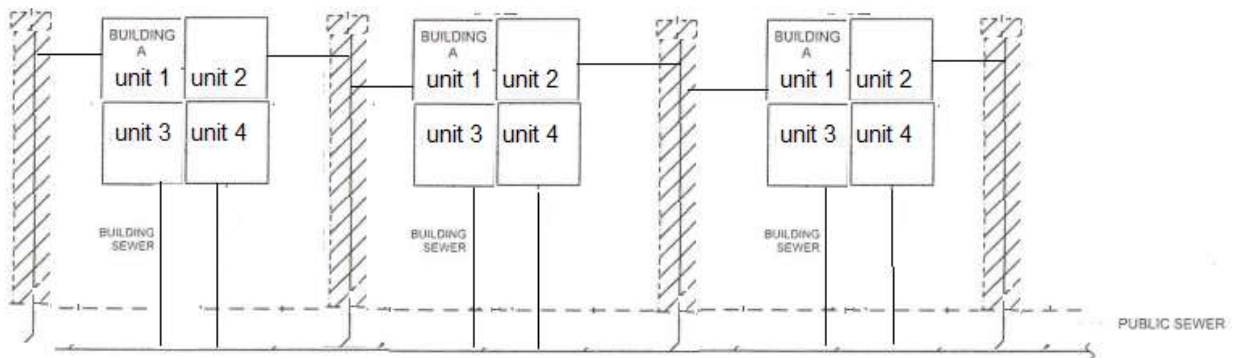


Figure 4

This would necessitate up to three extra sewer connections, while still having extra common sewers lines. It would also increase the run of sewer laterals for the back units before they entered the street. Longer drain lines, with more bends increases the chance for blockages.

When this is considered along with the fact that the IPC does NOT address the widespread adoption of low-flow water fixtures. Combining these modern fixtures along with the lower

average per household occupancy of these homes, the likelihood that these pipes will have adequate scour velocity is significantly diminished.

Along with a diminished ability to keep all the sewer lines properly scoured, this method of sewer drains, given our configuration, would necessitate extra cleanouts within the landscaping and driveway areas that are going to be more susceptible to damage from snow plows, car traffic, settling and frost heaves, creating more long term maintenance at higher costs to the homeowner. Much of this can be mitigated through extra measures which will inevitably add thousands of dollars to the cost of the sewer line installation, which, along with the diminished scour ability, seems to go against the general comments and purposes of the IPC chapter 7 heading.

Under our engineered design, there will be less sewer connections, creating shorter runs, with higher scour velocities, and less long-term maintenance. This is a much more efficient design, not only from a cost perspective, but from a sanitary and ease of maintenance perspective. This supports the overall intent of the IPC as it is written by itself and in reference to its commentary.

As per IPC 316.1: Code allows for an engineered solution of an equally good or better form of construction to be reviewed and applied.

“An alternative engineered design shall conform to the intent of the provisions of this code and shall provide an equivalent level of quality, strength, effectiveness, fire resistance, durability and safety. Material, equipment or components shall be designed and installed in accordance with the manufacturer’s instructions.”

We have spent significant time researching this method, and have implemented it in several communities without any problems. We feel that it is a superior design, and that it is in everyone’s best interest to build this system for this style of community, in this manner.

Damaged or blocked sewer lines are a risk that every homeowner shares, regardless of whether they have a common line running under their home or not, they all have sewer lines under their floors.

In addition, we have engineered ours, so that if there is any damage or blockage to the sewer line, it is most likely going to happen within their own home. We also provide a cleanout on both sides of the building to fully access, maintain, or fix any issues relating to a properly installed common sewer without having to dig up anyone’s floor.

Fears of broken lines are also unfounded because they are mostly based on older drain piping methods that were prone to degradation and breakage. With modern CPVC, as long as it’s properly installed, it will not break. The only times it might break are when it exits the home and enters the landscaping. This is because the single largest cause of modern plumbing breakage, is from tree roots. There are no trees growing under our buildings. However, there will be trees growing in the landscaped areas around the buildings, which under the code official’s proposed plan, would increase the number of sewer lines running in the landscaping, thus increasing the chance for sewer line breakage.

1.36 defines what a residence is.

“Residence(s)” means any dwelling unit situated upon a Lot and attached to one or more other dwelling units in which each unit has its own principal access to the outside, no unit is located over another unit, and each dwelling unit is separated from any other unit by one or more common Party Walls, designed and intended for separate, independent residential use and occupancy.

1.36.1 defines the interior elements, and defines at what point utilities become interior elements

For purposes of this Declaration, the “interior elements” of the Residences shall include all pipes, wires, conduits, lines or systems (which for brevity are herein and hereafter referred to as utilities), whether public or private-company owned, at the point at which the utilities penetrate into the Residence either through the concrete floor slab or exterior wall of the Residence and continuing into the interior portion of such Residence.

1.36.2 defines what the exterior elements are, specifically utilities

For purposes of this Declaration, the “exterior elements” of the Residences shall include all utilities, whether public or private-company owned, located on the Lots and which end at the point at which the utilities penetrate into the Residence either through the concrete floor slab or exterior wall of the Residence and continuing into the interior portion of such Residence but do not include any interior portion of such utilities located within a Residence which constitute interior elements as further defined in Section 1.36.1 above.

2.4.1 establishes the maintenance obligations of the hoa

As further described in Article 8, below, the Association shall maintain in a safe, sanitary and attractive condition:

2.4.1.1 common area utility maintenance obligations

The Common Area and all Improvements thereon, including, without limitation, all utility lines servicing one or more Residences, whether public or private company owned, located on, over or under any Common Area. The Association shall forever repair, replace and maintain the utilities that constitute part of the Common Area, whether public or private company owned or whether separately metered, located on the Common Area.

2.4.1.2 the exterior elements (including utilities) maintenance obligations

The exterior elements of the Residences, including, without limitation, all utility lines servicing one or more Residences, whether public or private company owned, located on, over or under any Lot, up to the point where the utility line penetrates the exterior wall, concrete floor slab or ceiling of the Residence. The Association shall forever repair, replace and maintain the utilities that constitute exterior elements of the Residence, whether public or private company owned or whether separately metered, located on the Lots and which end at the connecting point to the exterior of the Residence where such utilities enter the Residence and are stubbed to provide utility service to the Residence but do not include any interior portion of such utilities located within a Residence which constitute interior elements as further defined in Section 1.36.1 above.

2.4.1.3 establishes what the maintenance responsibilities of the homeowners are, ie the interior elements.

Each Owner shall, at such Owner's sole and exclusive expense, immediately repair all interior elements of his, her or its Residence, including without limitation all utility lines servicing the Residence, whether public or privately owned, located from the connecting point to the exterior of the Residence where such utilities enter the Residence (stubbed location) and continuing into the interior portion of such Residence and the exterior air conditioning condenser unit(s) that service such Owner's Residence.

8.1.1 establishes the hoa's duty to maintain common area and exterior elements again

Association's Duty to Maintain Common Area, Public Right of Way, Lots, Exterior Elements of Residences, and Structural Elements of Party Walls.

The Association, or its duly delegated representative, shall manage, maintain, repair and replace the Common Area and all Improvements located thereon (including all patios, but only during such patios' warranty periods), and the Association may, without obligation, maintain areas which any Municipal Authority or any utility company is maintaining or is obligated to maintain. Each Owner shall be deemed to have delegated his, her or its undivided interest in the Common Area to the Association for such purposes.

8.1.3 hoa's duty to repair all exterior elements (including utilities)

In addition to the foregoing maintenance obligations, the Association shall have the duty of maintaining and repairing the Party Walls, landscaped areas, concrete improvements, fences, and driveways located on a Lot and all of the exterior elements of the Residences, whether or not enclosed by an Exterior Courtyard (defined below), including without limitation the utility and other service lines, whether public or private-company owned, constituting exterior elements as further described in Section 1.36.2 above or constituting a part of the Common Areas, and the structural integrity of exterior structural walls and Party Walls of Residences, and the cost of said maintenance and repair shall constitute a Community Expense. The Board shall not need the prior approval of the Members of the Association to cause such maintenance or repairs to be accomplished, notwithstanding the cost thereof.

8.1.4.3 provides that the hoa will deliver utilities (unless separately metered)

8.1.4.4 provides means to set aside funds to pay for maintenance

set aside reserves for future maintenance, repairs, and replacements of all areas and Improvements that the Association is obligated to maintain as required by this Declaration, including without limitation reserves for the maintenance and repair of the Party Walls and utility and other service lines, whether public or private-company owned, constituting exterior elements as further described in Section 1.36.2 above, or constituting a part of the Common Area;